Self Diagnosis
Supported model

SERVICE MANUAL

AE-5 CHASSIS

MODEL	COMMANDER	DEST	CHASSIS NO.	MODEL	COMMANDER	DEST	CHASSIS NO.
KV-28FX65B	*RM-887*	*FRENCH*	*SCC-Q13J-A*	***KV-32FX65B***	*RM-887*	*FRENCH*	*SCC-Q13K-A*
KV-28FX65E	*RM-887*	*ESP*	*SCC-Q14J-A*	***KV-32FX65E***	*RM-887*	*ESP*	*SCC-Q14K-A*
KV-28FX65U	*RM-887*	*UK*	*SCC-Q15E-A*	***KV-32FX65K***	*RM-887*	*OIRT*	*SCC-Q15F-A*
				KV-32FX65U	*RM-887*	*UK*	*SCC-Q16M-A*

FD Trinitron

TRINITRON ® COLOR TV

SONY®

TABLE OF CONTENTS

Section *Title* *Page*

Specifications 3
Connectors 5
Self Diagnostic Software 6

1. GENERAL

Tuning your TV 9
Finding your Video Channel 9
NexT View 9
Teletext 10
Using the TV menu system 11
Specifications 15
Troubleshooting 15

2. DISASSEMBLY

2-1. Rear Cover Removal 16
2-2. Speaker Connector 16
2-3. Chassis Removal 16
2-4. Service Position 17
2-5. D1 Board Removal 17
2-6. J Board Removal 17
2-7. B1 Board Removal 18
2-8. Side Control Removal 18
2-9. F4 Bracket Removal 18
2-10. F4 and H8 Board Removal 18
2-11. Picture Tube Removal 19
Bottom Plates 20

3. SET-UP ADJUSTMENTS

3-1. Beam Landing 21
3-2. Convergence 22
3-3. Focus, Screen [G2] Adjustment 24
3-4. White Balance 24

4. CIRCUIT ADJUSTMENTS

4-1. Electrical Adjustments 25
4-2. Volume Electrical Adjustments 29
4-3. Test Mode 2 30

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE CARBON PAINTED ON THE CRT, AFTER REMOVAL OF THE ANODE CAP.

WARNING !!

AN ISOLATION TRANSFORMER MUST BE USED DURING ANY SERVICE WORK TO AVOID POSSIBLE SHOCK HAZARD DUE TO LIVE CHASSIS, THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

Section *Title* *Page*

5. DIAGRAMS

5-1. Block Diagram (1) 31
Block Diagram (2) 35
Block Diagram (3) 39
Block Diagram (4) 43
5-2. Circuit Board Location 46
5-3. Schematic Diagrams and Printed Wiring Boards 46
  * H7 Board 47
  * H8 Board 47
  * F4 Board 48
  * F1 Board 48
  * E Board 49
  * M1 Board 53
  * D1 Board 56
  * D Board 63
  * A Board 66
  * J Board 75
  * C Board 81
  * VM Board 83
  * B1 Board 85
5-4. Semiconductors 89
5-5. IC Blocks 88

6. EXPLODED VIEWS

6-1. Chassis (28FX65) 92
6-2. Picture Tube (28FX65) 93
6-3. Chassis (32FX65B/E/K) 94
6-4. Picture Tube (32FX65B/E/K) 95
6-5. Chassis (32FX65U) 96
6-6. Picture Tube (32FX65U) 97

7. ELECTRICAL PARTS LIST 98

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE'LANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE.

ATTENTION !!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENTION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÈ LORS DE TOUT DÈPANNAGE LE CHÁSSIS DE CE RÈCEPTEUR EST DIRECTMENT RACCORDÈ Á L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS Á LA SECURITÈ!!

LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES SCHÈMAS DE PRINCIPE, LES VUES EXPLOSÈES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÈCURITÈ DU FONCTIONNEMENT, NE LES REMPLACER QUE PAR DES COMPSANTS SONY DONT LE NUMÈRO DE PIÈCE EST INDIQUÈ DANS LE PRÈSENT MANUEL OU DANS DES SUPPLÈMENTS PUBLIÈS PAR SONY.

ITEM MODEL	Television System	Stereo System	Channel Coverage	Color System
French	B/G/H, D/K,L,I	GERMAN/NICAM Stereo	VHF : E02-E12, R01-R12 UHF : E21-E69, R21-R69 CABLE TV : S01-S20, B-Q HYPER : S21-S41	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
Spanish	B/G/H, D/K	GERMAN /NICAM Stereo	VHF : E02-E12, R01-R12 UHF : E21-E69, R21-R69 CABLE TV : S01-S05, S1-S20 HYPER : S21-S41	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
OIRT	B/G/H, D/K	GERMAN /NICAM Stereo	VHF : E02-E12, R01-R12 UHF : E21-E69, R21-R69 CABLE TV : S01-S05, S1-S20 HYPER : S21-S41	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
UK	I	NICAM Stereo	UHF : B21-B69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)

Model	KV-28FX65B	KV-28FX65E	KV-28FX65U	
Power Consumption	126W	126W	126W	
Model	KV-32FX65B	KV-32FX65E	KV-32FX65U	KV-32FX65K
Power Consumption	122W	122W	122W	122W

Picture Tube	FD Trinitron Wide Approx 71 cm (28 inches) (Approx 66cm picture measured diagonally) Approx 82 cm (32 inches) (Approx 76cm picture measured diagonally) 110 degree deflection	Sound output Subwoofer	Right and Left speaker 2x20W (Music Power) 2x10W (RMS) 1x30W (Music Power) 1x15W (RMS)
Input/Output Terminals [REAR]		Power Requirements	220 - 240V AC
1: 21-pin Euro connector (CENELEC standard)	Inputs for Audio and Video signals. Inputs for RGB. Outputs of TV Video and Audio signals.	Dimensions	28" Approx 796x518x522mm 32" Approx 883x567x562mm
2: 21-pin Euro connector	Inputs for Audio and Video signals. Inputs for S Video. Outputs of TV Video and Audio signals. (selectable)	Weight	28" Approx 48.0kg 32" Approx 64.0kg
3: 21-pin Euro connector	Inputs for Audio and Video signals. Inputs for S Video. Outputs for Video and Audio signals (monitor out)	Supplied Accessories	RM-887 Remote Commander (1) IEC designated R6 battery (2)
RCA Connectors	Variable output for Audio Signals	Other Features	NexTView, Digital Comb Filter, Noise Reduction, Graphic Equaliser, 2000 Page Text Memory.
Input/Output Terminals [FRONT]		**Remote control system**	Infrared control
Headphone jack	stereo mini jack	Power requirements	3V dc 2 batteries IEC designation R6 (size AA)
Audio inputs	phono jacks	Dimensions	Approx 210x45x23mm (w/h/d)
Video inputs	phono jacks	Weight	Approx 95g (not including battery)
S Video input	4 pin DIN		
Design and specifications are subject to change without notice.			

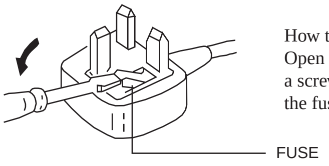
Model Name Item	KV-28FX65B KV-32FX65B	KV-28FX65E KV-32FX65E	KV-28FX65U KV-32FX65U	KV-32FX65K
Pal Comb	OFF	OFF	OFF	OFF
PIP	OFF	OFF	OFF	OFF
RGB Priority	ON	ON	ON	ON
Woofer Box	ON	ON	ON	ON
Scart 1	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON
Scart 3	ON	ON	ON	ON
Front in (4)	ON	ON	ON	ON
Projector	OFF	OFF	OFF	OFF
AKB in 16:9 mode	ON	ON	ON	ON
Norm B/G	ON	ON	OFF	ON
Norm I	ON	OFF	ON	OFF
Norm D/K	ON	ON	OFF	ON
Norm AUS	OFF	OFF	OFF	OFF
Norm L	ON	OFF	OFF	OFF
Norm SAT	OFF	OFF	OFF	OFF
Norm M	OFF	OFF	OFF	OFF
Teletext	ON	ON	ON	ON
Nicam Stereo	ON	ON	ON	ON

WARNING (UK Models only)

The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **13 AMP** rating. Should the fuse need to be replaced, use a **13 AMP FUSE** approved by ASTA to **BS 1362**, ie one that carries the ASTA mark.

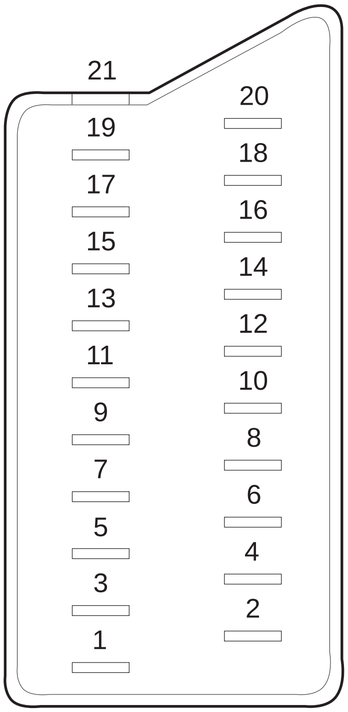
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR THE OUTLET SOCKETS IN YOUR HOME, IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET.

When an alternative type of plug is used, it should be fitted with a **13 AMP FUSE**, otherwise the circuit should be protected by a **13 AMP FUSE** at the distribution board.



How to replace the fuse.
Open the fuse compartment with a screwdriver blade and replace the fuse.

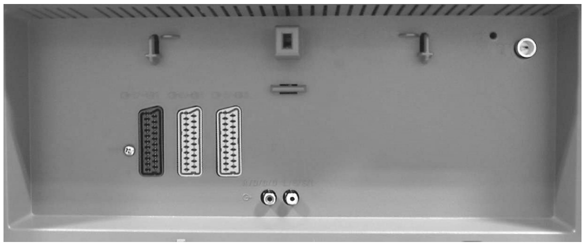
21 pin connector



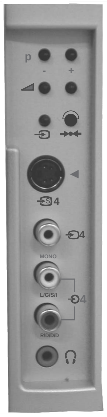
Pin No	1	2	3	Signal	Signal level
1	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedence : Less than 1kohm*
2	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedence : More than 10kohm*
3	○	○	○	Audio output A (left)	Standard level : 0.5V rms Output impedence : Less than 1kohm*
4	○	○	○	Ground (audio)	
5	○	○	○	Ground (blue)	
6	○	○	○	Audio input A (left)	Standard level : 0.5V rms Output impedence : More than 10kohm*
7	○	●	●	Blue input	0.7 +/- 3dB, 75 ohms positive
8	○	○	○	Function select (AV control)	High state (9.5-12V) : Part mode Low state (0-2V) : TV mode Input impedence : More than 10K ohms Input capacitance : Less than 2nF
9	○	○	○	Ground (green)	
10	○	○	○	Open	
11	○	●	●	Green	Green signal : 0.7 +/- 3dB, 75 ohms, positive
12	○	○	○	Open	
13	○	○	○	Ground (red)	
14	○	○	○	Ground (blanking)	
15	○	–	–	Red input	0.7 +/- 3dB, 75 ohms, positive
	–	○	○	(S signal Chroma input)	0.3 +/- 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Ys signal)	High state (1-3V) Low state (0-0.4V) Input impedence : 75 ohms
17	○	○	○	Ground (video output)	
18	○	○	○	Ground (video input)	
19	○	○	○	Video output	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
20	○	–	–	Video input	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
	–	○	○	Video input Y (S signal)	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
21	○	○	○	Common ground (plug, shield)	

○ Connected ● Not Connected (open) * at 20Hz - 20kHz

Rear Connection Panel



Front Connection Panel



S-Video socket

S Video socket pin configuration		
Pin No	Signal	Signal Level
1	Ground	-
2	Ground	-
3	Y (S signal) input	1V+/- 3dB 75ohm, positive Sync. 0.3V -3 +10dB
4	C (S signal) input	0.3V+/- 3dB 75ohm, positive Sync.

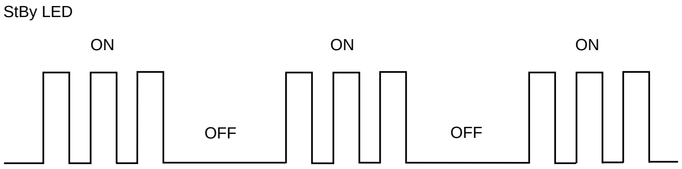
AE-5 SELF DIAGNOSTIC SOFTWARE

The identification of errors within the AE-5 chassis is triggered in one of two ways :- 1: Busy or 2: Device failure to respond to IIC. In the event of one of these situations arising the software will first try to release the bus if busy (Failure to do so will report with a continuous flashing LED) and then communicate with each device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the LED (Series of flashes which must be counted) See table 1., non fatal errors are reported using this method.

Diagnostic Item Description	No of times Standby LED Flashes	Probable cause Location	Detected Symptoms
Power does not turn on	Does not light	Power cord is not plugged in. Fuse is open circuit.	Power does not come on No power is supplied to the TV AC power supply is faulty
+B Overcurrent (OCP)	2 times	H.OUT (Q6803/6804) is shorted. (D Board) Linearity FET (Q6806) is shorted. (D Board) IC6604 Power IC is shorted. (D Board)	Power does not come on Load on power line has shorted
Vertical Deflection stopped	4 times	+15V is not supplied R6835 open (D Board) -15V is not supplied R6834 open (D Board) IC6700 is shorted (D Board)	Vertical deflection pulse has stopped Power line has shorted

Error Message	**LED Flashes**
No error	00
Reserved	01
OCP (Over Current Protection)	02
OVP (Over Voltage Protection)	03
Vertical Protection	04
Unstable AKB (check starts after 30's, enable TT61 disable TT62)	05
Horizontal Protection	06
Speaker Protection	07
I2C bus 0 error	08
M-B Tele-Text-Decoder	09
M-B ST24C32, NVM	10
J-B TDA9320, Main Colour Decoder	11
B1/B2-B Feature Box	12
B1-B D/A-Converter	13
E-B Backend	14
J-B MSP3410D, Sound Processor	15
J-B CXD2057, Auto Wide	16
External RAM	17

Flash Timing Example : e.g. error number 3



Error Detection Monitor

Device acknowledge is used to check IIC errors. Device acknowledge is checked by sending an IIC start sequence during CRT power on. Each device is checked three times, if there is no acknowledge after each attempt, it will be regarded as an error.
There are three steps to check for errors.

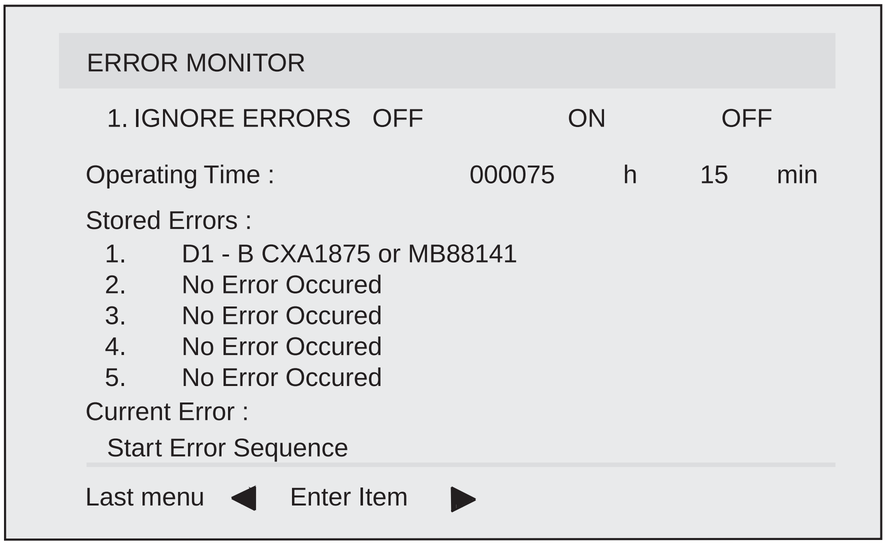
1. IIC line 0
   If all devices except the NVM have errors, IIC line 0 error is displayed.
2. Board check
   If all devices mounted on one board have errors, board error is displayed.
3. Each device check
   If IIC line error and board error are not detected then the device with the error is displayed.

The detected errors can be displayed as follows :

1. Error Monitor Menu.
2. Error Reader.

1. Error Monitor Menu

Error Display Mode is entered by the following sequence of commands Standby -> Information -> Digit 5 -> Volume Down -> TV



ERROR MONITOR

1. IGNORE ERRORS OFF ON OFF

Operating Time : 000075 h 15 min

Stored Errors :
1. D1 - B CXA1875 or MB88141
2. No Error Occured
3. No Error Occured
4. No Error Occured
5. No Error Occured

Current Error :
Start Error Sequence

2. Error Reader Display

The error reader display is connected to the service connector to read actual error codes. The part number for the error reader display is S-188-900-10. Once an error has been detected it will then be displayed on the two digit error reader. The errors displayed refer to the following table.

Error Code	Error Message
000h	No error occurred
001h	Bus error, IIC0
002h	Bus error, IIC1
100h	**A-Board**
101h	A-B CXA1875, Port Expander
102h	A-B TU1326, Main Tuner
103h	A-B TU1350, Sub Tuner
200h	**B1-Board**
201h	B1-B P83C654, Feature Box B1-B. SDA9280, *D/A Convertor*
202h	B1-B *P83C654, Feature Box B1-B. SDA9280*, D/A Convertor
300h	**B2-Board**
301h	B2-B. SAA4977, BESIC
302h	B2-B. SAA495X, Field Memory
400h	**B3-Board**
401h	B3-B. MID-X
402h	B3-B. Panorama
403h	B3-B. DRC
404h	BK-B. Picture Booster
500h	**D1-Board**
501h	D1-B CXA8070, Dynamic Convertor
502h	D1-B CXA1875, Port Expander
600h	**E-Board**
601h	E-B CXD2100, Backend
700h	**J-Board**
701h	J-B CXD2057, Auto Wide
702h	J-B SDA9288, PIP
703h	J-B Sub Colour Decoder
704h	J-B Main Colour Decoder
705h	J-B CXA1875, Sub-Sound
706h	J-B TDA7309, HP-Amplifier
707h	J-B TEA6422DT, Audio Switch
708h	J-B MSP3410D, Sound Processor
709h	J-B TC9337F, Sound DSP
70Ah	J-B CXA21X69, AV Switch
800h	**M-Board**
801h	M-B ST24C32, NVM

The operating instructions mentioned here are partial abstracts from the ‘Operating Instruction Manual’. The page numbers of the ‘Operating Instruction Manual’ remain as in the manual.

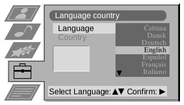
Installation

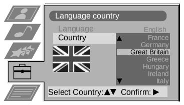
5. Tuning your TV

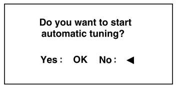
Before you tune your TV, you will be asked to set your language and country.

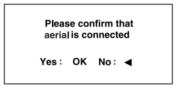
1. The Language/Country menu appears on the TV screen with the word ‘English’ highlighted.
2. Press the ▲ or ▼ buttons on the remote control to select your chosen language then press the OK button to confirm.
3. Press ▲ or ▼ to select the country in which you wish to operate the TV then press the OK button to confirm your choice. Select ‘OFF’ if you do not want your channels stored in a given channel sequence starting from programme position 1.
4. The ‘autotune’ menu appears on the TV screen in your selected language. Press the OK button to confirm.
5. Ensure the aerial is connected as instructed, then press the OK button to confirm. The TV starts to automatically search and store all available channels for you. This may take a few minutes - please be patient and do not press any buttons.
6. Once the TV has tuned all available channels the ‘Programme Sorting’ menu appears on the TV screen enabling you to change the order of the channels on your TV. If you wish to change the channel order, press the ▲ or ▼ buttons to select the channel you want to move, then press ▶. Press the ▲ or ▼ buttons to select the new programme number position for your selected channel then press the OK button to confirm. The selected channel now moves to its new programme position and the other channels move accordingly. Repeat this procedure if you wish to sort the order of other channels on your TV.
7. Press the MENU button to remove the menu from the TV screen.
8. Press the PROGR+/- or the numbered buttons to view the TV channels.

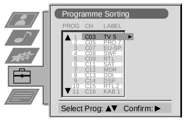
Note: If you would like to stop the autotune process at any stage, press the OK button.


Language country
Language
Country
Čeština
Dansk
Deutsch
English
Español
Français
Italiano
Select Language: ▲▼ Confirm: ▶

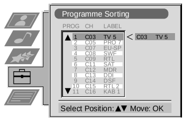

Language country
Language
Country
English
France
Germany
Great Britain
Greece
Hungary
Ireland
Italy
Select Country: ▲▼ Confirm: ▶


Do you want to start automatic tuning?
Yes : OK No : ◀

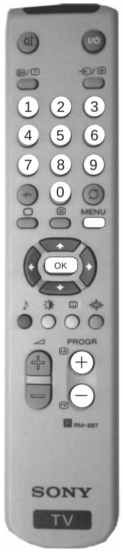

Please confirm that aerial is connected
Yes : OK No : ◀


Programme Sorting
Select Prog: ▲▼ Confirm: ▶

PROG	CH	LABEL
1	C03	TV 5
2	C05	PRO 7
3	C07	EU-SP
4	C08	SWF
5	C09	RTL
6	C11	SAT
7	C12	MDR
8	C13	DDI
9	C14	DSF
10	C15	RTL 2
11	C16	KAB 1


Programme Sorting
C03 TV 5
Select Position: ▲▼ Move: OK

PROG	CH	LABEL
1	C03	TV 5
2	C05	PRO 7
3	C07	EU-SP
4	C08	SWF
5	C09	RTL
6	C11	SAT
7	C12	MDR
8	C13	DDI
9	C14	DSF
10	C15	RTL 2
11	C16	KAB 1


I/ⓘ
1
2
3
4
5
6
7
8
9
0
MENU
OK
PROGR
SONY
TV
RM-887

6. Finding your video channel

If you have connected a VCR to your TV, you now need to find your video channel. Please refer to the ‘Connecting the TV’ section of this manual on page 3.

1. Press the PROGR+/- buttons on the TV remote control until your video picture appears on the TV screen.

Note: If you wish to move your video channel to a different programme position, refer to the ‘Re-arranging the TV channels’ section of this instruction manual.

Operation

NexTView*

* depending on availability of service

ⓘ NexTView is an electronic programme guide with up to 1 week* of programme information on those channels included in the selected provider.
*If the data exceeds the memory of NexTView, you will get information on less than 7 days.

When looking for information you can search by theme (sports, art etc.), date or time (e.g. broadcasts between 8 and 9 p.m.). When you’ve found a programme you can go directly to this programme, use the timer to remind you of it or preset your VCR with Smartlink.

ⓘ The NexTView provider is responsible for the contents of the guide. The TV set is responsible for the presentation, that is the menu structure and the navigation, if there is none from the provider. If there is a navigation from the provider the basic operation with the joystick is the same as described in the Sony navigation.

At first you need to select a channel providing a NexTView service. In this case the indication “NexTView” is displayed as soon as all data is available. When you later change the channel you can still select this NexTView service.

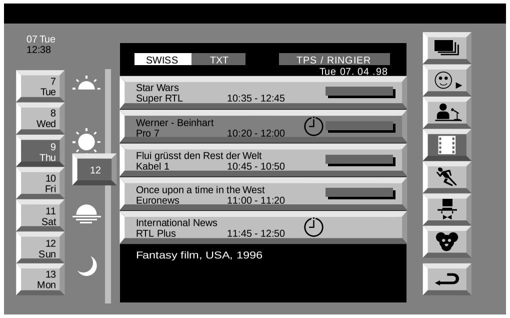
Operation using the Sony navigation

1. Press ▣ to switch NexTView on and off.
2. Use the joystick buttons as follows
   - moving up or downwards within a column: Use ▲ or ▼.
   - going to the left columns time and date: Use ◀.
   - going to the right column icons: Use ▶.
   - Confirming a selection: Press OK.

(a) while in the columns date, time or icon (themes), the programme list changes according to the selection.
(b) while in the programme list, confirming a running broadcast brings you directly to the TV programme or confirming a future programme brings you to the long info menu.

Index

full list of selection
personal selection
news broadcasts
movies
sports
entertainment
children
return to last menu


07 Tue
12:38
7 Tue
8 Wed
9 Thu
10 Fri
11 Sat
12 Sun
13 Mon
12
SWISS
TXT
TPS / RINGIER

Tue 07. 04 .98

Star Wars
Super RTL 10:35 - 12:45

Werner - Beinhart
Pro 7 10:20 - 12:00

Flui grüsst den Rest der Welt
Kabel 1 10:45 - 10:50

Once upon a time in the West
Euronews 11:00 - 11:20

International News
RTL Plus 11:45 - 12:50

Fantasy film, USA, 1996

NexTView*

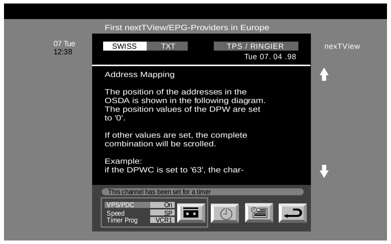
Individual Setting

When you select ▣ there will be no personal pre-selection. ☺▸ lets you make your own individual selection of themes, limiting the search to the marked ones.

1. Select ☺▸ using ▲ or ▼. Push ▶ to enter.
   The menu Individual Settings is displayed.
2. Select the item you wish to mark using ▲ or ▼. Confirm by pressing OK.
   Repeat step 2 for all the items you wish to have in your list.
3. When finished with the list, select ⮐ using ▶ and press OK.

Using the ‘Long Info’ menu

1. Select a future programme in the column programme list using ▲ or ▼. Press OK.
   The long info menu is displayed.



First nextTView/EPG-Providers in Europe

07 Tue
12:38

Tue 07. 04 .98

Address Mapping

The position of the addresses in the OSDA is shown in the following diagram. The position values of the DPW are set to '0'.

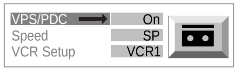
If other values are set, the complete combination will be scrolled.

Example:
if the DPWC is set to '63', the char-

This channel has been set for a timer

VPS/PDC On
Speed SP
Timer Prog VCR1

You may wish to record the selected programme with your VCR.
(only with Smartlink VCRs)



VPS/PDC On
Speed SP
VCR Setup VCR1

2. Select ▣ using ◀ and press OK.
   This information is transferred to the VCR connected to your set.

Setting up ypur VCR

3. Select VPS/PDC by pushing ◀ repeatedly.

With this setting on, you have the guaranteed recording of the whole broadcast should there be a change in the TV programme. This only works if the selected channel broadcasts a VPS/PDC signal.

- Select On or Off using OK.

4. Select Speed using ▼.

Select between standardplay (SP) or longplay (LP) mode.With longplay you can record twice as much on a videotape. The picture quality, however, may suffer.

- Select SP or LP using OK.

5. Select VCR Setup using ▼.

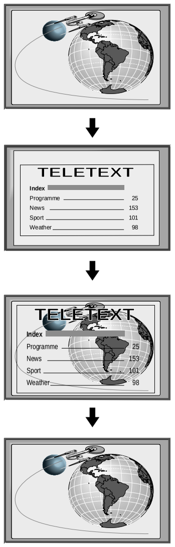
Select which of the connected Smartlink VCRs you wish to programme.

- Select VCR 1 or 2 using OK.

6. Select ⮐ using ▶. Press OK.
   You are back in the last menu.

Teletext

Most TV channels broadcast information via Teletext. The index page of the teletext service (usually page 100) gives you information on how to use the service. Please use a TV channel with a strong signal, otherwise there may be Teletext errors.



Switching Teletext on and off

1. Select the TV channel which carries the teletext service you want to view.
2. Press the ▤ button once to get Teletext only.
3. Press ▤ twice for Mix mode.
4. Press ▤ a third time to switch off Teletext.

Selecting a Teletext page

Input three digits for the page number using the numbered buttons on the remote control. If you make a mistake, type in any three digits then re-enter the correct page number.

Using Other Teletext Functions

Selecting the next or preceding page

Press the ▼ or ▲ buttons on the remote control to select the previous or next page.

Selecting a sub page

A teletext page may consist of several sub pages. In this case an information line is displayed, showing the number of subpages. Select the sub page by pressing ▲ or ▼.

To freeze a Teletext page

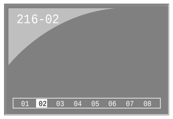
Press the ⊞ button to freeze the page. Press again to cancel the freeze.

Revealing concealed information

Press the ? button to reveal information. Press again to conceal the information.

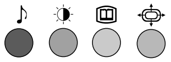
Using colour buttons to access pages (Fastext)

(only available if the TV station broadcasts Fastext signals)
When the colour coded menu appears at the bottom of a page, press a coloured button on the remote control (green, red, yellow or blue) to access the corresponding page.



Using the feature ‘Page Catching’

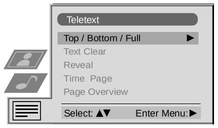
1. Press the numbered buttons on the remote control to select a teletext page which has several page numbers on it (eg the index page).
2. Press the OK button.
3. Press ▲ or ▼ to select the desired page number then press the OK button. The requested page is displayed after some seconds.



Teletext

Using the Teletext menu

1. With Teletext switched on, press the MENU button on the remote control to display the menu on the TV screen.
2. Press ▲ or ▼ to select your chosen item on the screen then press ▶ to display the relevant sub menu.
3. To remove the Teletext menu from the screen, press the MENU button.



Top/Bottom/Full

The Top/Bottom/Full sub menu allows you to enlarge different sections of the Teletext page. Press ▲ to enlarge the upper half of the screen, Press ▼ to enlarge the lower half. Press the OK button to restore the page to normal size. Press ◀ to return to the Teletext menu screen.

Top: ▲ Bottom: ▼ Full: OK

Text Clear

Text Clear is a function that displays a TV channel while a Teletext page is being searched for.

1. Press the ▤ button on the remote control to select full screen text.
2. Press the MENU button to display the ‘Teletext’ menu.
3. Press ▲ or ▼ to highlight ‘Text Clear’ and press ▶ to select.
4. The current TV channel is displayed. Once the text page has been found a blue ▤ symbol will appear in the top left hand corner of the screen.
5. Press the ▤ button on the remote control to view the page.

Reveal

Some Teletext pages contain hidden information (eg for a quiz), which can be revealed.

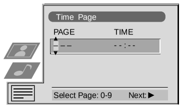
1. In text mode press the MENU button on the remote control to access the ‘Teletext’ menu.
2. Press ▲ or ▼ to highlight ‘Reveal’ and press ▶ to select. The hidden information is displayed on the screen.

Time Page*

*depending on availability of service.

Time Page allows a time-coded Teletext page (such as an alarm page), to be displayed at a set time.

1. In Text mode press the MENU button on the remote control to access the ‘Teletext’ menu.
2. Press ▲ or ▼ to highlight ‘Time Page’ and press ▶ to select. The ‘Time Page’ sub menu is displayed.
3. Enter the desired page number using the numbered buttons on the remote control.
4. Enter the desired time using the remote control.
5. Press OK to confirm the settings. The TV will exit Teletext mode and the time will be displayed in the top left hand corner of the screen. At the requested time the desired page is displayed.



Page Overview*

*only available if TOP-Text is transmitted by the TV station.

In this menu the TOP-Text pages are divided into two columns, the first column showing ‘blocks’ of pages and the second showing ‘groups’ of pages.

1. Press ◀ or ▶ to select the first or second column.
2. Press ▲ or ▼ to select the relevant ‘group’ or ‘block’ of pages.
3. Press the OK button to display the chosen pages.

Using the TV menu system

The TV consists of a menu system which is based on a series of user friendly on-screen displays and menus. These displays will help you get the most from your TV, helping you to change picture and sound settings, to alter the size of the TV picture and to rearrange the TV channels etc.

Adjusting the picture and sound

The picture and sound are preset at the factory. You can however adjust them to suit your own taste.

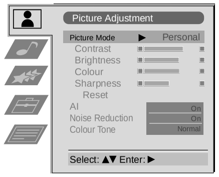
1. Press the MENU button on the remote control to display the menu on the TV screen.
2. Press the ▲ or ▼ buttons to select 👤 for picture settings or ♪ for sound settings then press ▶ to enter either the ‘Picture Adjustment’ menu or the ‘Audio Adjustment’ menu.
3. Press the ▲ or ▼ buttons to select the item on the screen you wish to adjust then press ▶ to confirm. For a description of the menu items and their effects, see the table below.
4. Press the ▲, ▼, ▶ or ◀ buttons to adjust your selected item.
5. As soon as you have adjusted the item, press the OK button to store the new setting.
6. Repeat steps 3-5 if you wish to adjust any of the other items.
7. Press the MENU button to remove the menu from the TV screen.

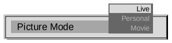
Picture Control

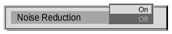
Item	Effect/Operation
Picture Mode	▼ Live (for live broadcasts) Personal (for individual settings) ▲ Movie (for movie broadcasts)
Contrast	Less ◀ ▶ More
Brightness*	Darker ◀ ▶ Brighter
Colour*	Less ◀ ▶ More
Hue**	Reddish ◀ ▶ Greenish
Sharpness*	Softer ◀ ▶ Sharper

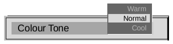
*Only available if ’Personal’ is selected in ‘Picture Mode’
**Only available for NTSC colour signal (eg. US video tapes)

Reset	Resets picture to the factory preset levels
AI (Artificial Intelligence)	▼ On: Automatic optimization of contrast level according to the TV signal. ▲ Off: Normal.
Noise Reduction	▼ On: Reduces picture noise in case of a weak broadcasting signal. ▲ Off: No noise reduction.
Colour Tone	▼ Warm: Gives a warm tint to the picture. Normal: Normal. ▲ Cool: Gives a cool tint to the picture.









Sound Control

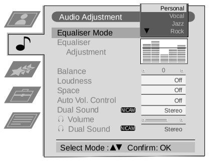
Item	Effect/Operation
Equaliser Mode	▼ Personal Vocal Jazz Rock Pop ▲ Flat (fixed setting, cannot be adjusted)
Equaliser adjustment	You can adjust the mode selected in Equaliser mode by cutting and boosting the 5 selected frequency bands. Press ◀ or ▶ to select the frequency band then ▼ or ▲ to adjust the frequency. Finally, press the OK button to store the new adjustment.

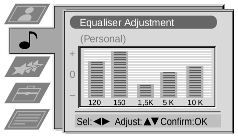
ℹ If you want to store the new setting, you need to set the Equaliser mode to 'Personal'. Personal mode permanently stores the setting, all other modes (Vocal, Jazz, Rock, Pop) store only until the next mode change.

Item	Effect/Operation
Balance	◀ More left ▶ More right
Loudness	▼ Off: Normal ▲ On: For music broadcasts
Space	▼ Off: Normal ▲ On: Special acoustic effect
Auto Vol. Control	▲ Off: Volume level changes according to the broadcast signal. ▼ On: Volume level of the channels will stay the same independent of the broadcast signal (eg in the case of advertisements).
Dual Sound	For a bilingual broadcast: ▼ A for channel 1 ▲ B for channel 2 For a stereo broadcast: ▼ Mono ▲ Stereo

ℹ When NICAM stereo is being broadcast, the indication NICAM appears briefly on the screen.

Item	Effect/Operation
Headphones 🎧 Volume	Adjusts headphone volume. Can also adjust the volume level of additional equipment connected to the RCA sockets on the rear of the TV.
🎧 Dual Sound	For a bilingual broadcast: ▼ A for channel 1 ▲ B for channel 2


Audio Adjustment
Equaliser Mode
Equaliser Adjustment
Balance
Loudness
Space
Auto Vol. Control
Dual Sound
Volume
Dual Sound
Personal
Vocal
Jazz
Rock
0
Off
Off
Off
NICAM
Stereo
Stereo
Select Mode : ▲▼ Confirm: OK


Equaliser Adjustment
(Personal)
+
0
–
120
150
1.5K
5 K
10 K
Sel: ◀▶ Adjust: ▲▼ Confirm:OK

Loudness
Off
On

Space
Off
On

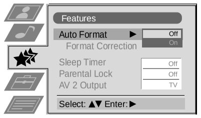
Auto Vol. Control
Off
On

Dual Sound
NICAM
Mono
Stereo

Dual Sound
NICAM
B
A

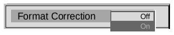
Using the Features menu

1. Press the MENU button on the remote control to display the menu on the TV screen.
2. Press the ▲ or ▼ buttons to select ★ for the 'Features' menu then press ▶ to enter the 'Features' menu.
3. Press the ▲ or ▼ buttons to select the desired menu item then press ▶ to confirm. For a description of the menu items and their effects, see the table below.
4. Press the ▲, ▼, ▶ or ◀ buttons to select the desired setting.
5. Press the OK button to confirm your choice of setting.
6. Repeat steps 3-5 if you wish to select any of the other items.
7. Press the MENU button to remove the menu from the TV screen.


Features
Auto Format
Format Correction
Sleep Timer
Parental Lock
AV 2 Output
Off
On
Off
Off
TV
Select: ▲▼ Enter: ▶

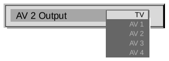
Item	Effect/Operation
Auto Format* *only for aerial signal	▼ Off:Size of picture does not automatically adjust. ▲ On:The TV will automatically adjust the picture size to eliminate any dark areas on the TV picture (as shown below):
Format Correction* (*only if Auto Format is set to 'On')	▼ Off: 4:3/14:9 is selected. ▲ On: Smart mode is selected automatically for 4:3/14:9 broadcasts.
Sleep Timer	You can select a time after which the TV switches itself into standby mode. ▼ Off ▲ 90 min
Parental Lock	▼ Off: No parental lock. ▲ On: This feature disables the buttons on the TV when the set is in standby mode. It is only possible to switch the set back on by pressing a button on the remote control.
AV2 Output	▼ TV audio/video signal from the aerial ⫪. AV1 audio/video signal from scart 1. AV2 audio/video signal from scart 2. AV3 audio/video signal from scart 3. ▲ AV4 audio/video signal from connectors on front of the TV.

Auto Format
Off
On


Format Correction
Off
On

Sleep Timer
10 min

Parental Look
Off
On


AV 2 Output
TV
AV 1
AV 2
AV 3
AV 4

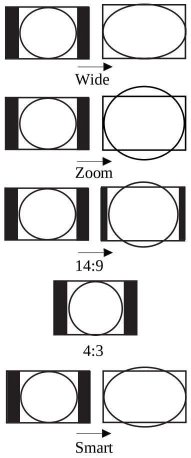
Changing the screen size

ℹ This feature allows you to change the size of the TV picture.

Press the ⊕ button on the remote control repeatedly or use the ▲ or ▼ buttons to select one of the following formats then press the OK button to confirm your selection:

Wide	for 16:9 broadcasts.
Zoom	widescreen format for letterbox movies.
14:9	compromise between 4:3 and 16:9 picture size.
4:3	conventional 4:3 picture size, full picture information.
Smart	imitation of wide screen effect for 4:3 broadcasts.

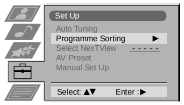
In Smart, Zoom and 14:9 modes parts of the top and bottom of the screen are cut off. Press ▲ or ▼ to adjust the position of the image on screen (eg to read subtitles) then press the OK button to confirm.

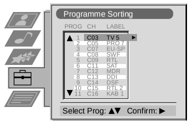

Wide
Zoom
14:9
4:3
Smart

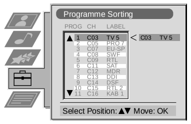
Using the TV menu system:

Re-arranging the TV channels

After tuning the TV, you can use this feature to change the order of the channels on the TV.


Set Up
Auto Tuning
Programme Sorting
Select NextView
AV Preset
Manual Set Up
Select: ▲▼ Enter: ▶


Programme Sorting
PROG CH LABEL
Select Prog: ▲▼ Confirm: ▶


Programme Sorting
PROG CH LABEL
Select Position: ▲▼ Move: OK

1. Press the MENU button on the remote control to display the menu on the TV screen.

2. Press the ▼ button to select the symbol on the menu screen then press ▶ to enter the ‘Set Up’ menu.

3. Press the ▼ button to select ‘Programme Sorting’ then press ▶ to enter the ‘Programme Sorting’ menu.

4. Press the ▲ or ▼ buttons to select the channel you want to move then press ▶ to confirm.

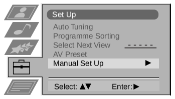
5. Press the ▲ or ▼ buttons to select the new programme position (eg PROG 4) for your selected channel then press the OK button to confirm. The selected channel now moves to its new programme position and the other channels move accordingly.

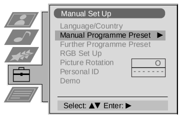
6. Repeat steps 4 and 5 if you wish to sort the other channels.

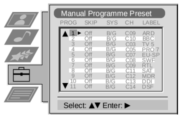
7. Press the MENU button to remove the menu from the TV screen.

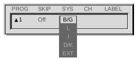
Manually tuning the TV

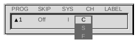
You have already tuned the TV automatically using the instructions at the start of this manual. You can however carry out this operation manually, adding channels to the TV, one at a time.

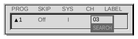

Set Up
Auto Tuning
Programme Sorting
Select Next View
AV Preset
Manual Set Up
Select: ▲▼ Enter: ▶

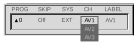

Manual Set Up
Language/Country
Manual Programme Preset
Further Programme Preset
RGB Set Up
Picture Rotation
Personal ID
Demo
Select: ▲▼ Enter: ▶


Manual Programme Preset
PROG SKIP SYS CH LABEL
Select: ▲▼ Enter: ▶


PROG SKIP SYS CH LABEL
1 Off B/G
EXT


PROG SKIP SYS CH LABEL
1 Off I C


PROG SKIP SYS CH LABEL
1 Off I 03
SEARCH


PROG SKIP SYS CH LABEL
0 Off EXT AV1 AV1
AV2
AV3

1. Press the MENU button on the remote control to display the menu on the TV screen.

2. Press the ▼ button to select the symbol on the menu screen then press ▶ to enter the ‘Set Up’ menu.

3. Press the ▼ button to select ‘Manual Set Up’ on the menu screen then press ▶ to enter the ‘Manual Set Up’ menu.

4. Press the ▼ button to select ‘Manual Programme Preset’ on the menu screen then press ▶ to enter the ‘Manual Programme Preset’ menu.

5. Press the ▲ or ▼ buttons to select a programme number for your channel (eg PROGR 1 for BBC1) then press ▶ to highlight the ‘SKIP’ column.

6. Press ▲ to select ‘OFF’ then press ▶ to highlight the ‘SYS’ column.

7. Press the ▲ or ▼ buttons to select the TV broadcast system or ‘EXT’ for a video input source (AV1, AV2, ...) then press ▶ to confirm.

8. Press the ▲ or ▼ buttons to select ‘C’ for terrestrial channels, ‘S’ for cable channels, or ‘F’ for direct frequency inputs then press ▶ to confirm.

9. Select the first number digit of ‘CH’ (channel) then the second number digit of ‘CH’ with the number buttons on the remote control or
Press the ▼ button to search for the next available channel.

10. If you do not wish to store this channel on the programme number you selected, press the ▲ or ▼ buttons to continue searching for the desired channel.

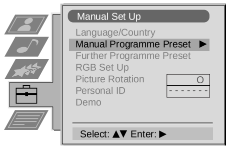
11. If this is the channel you wish to store, press the OK button.

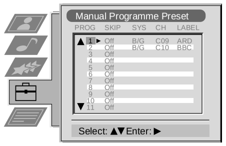
12. Repeat steps 5-11 if you wish to store more channels then press the MENU button to remove the menu from the TV screen.

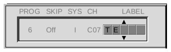
Using the TV menu system:

Naming a channel

Names for channels are usually taken automatically from Teletext if available. You can however name a channel or an input video source using up to five characters (letters or numbers).


Manual Set Up
Language/Country
Manual Programme Preset
Further Programme Preset
RGB Set Up
Picture Rotation
Personal ID
Demo
Select: ▲▼ Enter: ▶


Manual Programme Preset
PROG SKIP SYS CH LABEL
Select: ▲▼ Enter: ▶


PROG SKIP SYS CH LABEL
6 Off I C07 T E

1. Press the MENU button on the remote control to display the menu on the TV screen.

2. Press the ▼ button to select the symbol on the menu screen then press ▶ to enter the ‘Set Up’ menu.

3. Press the ▼ button to select ‘Manual Set Up’ then press ▶ to enter the ‘Manual Set Up’ menu.

4. Press the ▼ button to select ‘Manual Programme Preset’ then press ▶ to enter the ‘Manual Programme Preset’ menu.

5. Press the ▲ or ▼ buttons to select the channel you wish to name.

6. Press the ▶ button repeatedly until the first element of the ‘LABEL’ column is highlighted.

7. Press the ▲ or ▼ buttons to select a letter or number (select ‘-’ for a blank) then press ▶ to confirm. Select the other four characters in the same way.

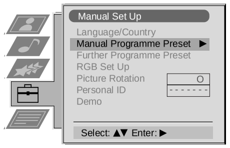
8. After selecting all the characters, press the OK button.

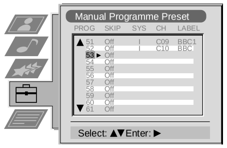
9. Repeat steps 5 to 8 if you wish to label other channels.

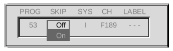
10. Press the MENU button to remove the menu from the TV screen.

Skipping programme positions

This function enables you to skip unused programme positions when selecting them with the PROGR+/- buttons. However, by using the number buttons you can still select the skipped programme position.


Manual Set Up
Language/Country
Manual Programme Preset
Further Programme Preset
RGB Set Up
Picture Rotation
Personal ID
Demo
Select: ▲▼ Enter: ▶


Manual Programme Preset
PROG SKIP SYS CH LABEL
Select: ▲▼ Enter: ▶


PROG SKIP SYS CH LABEL
53 Off I F189
On

1. Press the MENU button on the remote control to display the menu on the TV screen.

2. Press the ▼ button to select the symbol on the menu screen then press ▶ to enter the ‘Set Up’ menu.

3. Press the ▼ button to select ‘Manual Set Up’ then press ▶ to enter the ‘Manual Set Up’ menu.

4. Press the ▼ button to select ‘Manual Programme Preset’ then press ▶ to enter the ‘Manual Programme Preset’ menu.

5. Press the ▲ or ▼ buttons to select the programme position then press ▶ to highlight the ‘SKIP’ column.

6. Press the ▲ or ▼ buttons to select ‘Off’ or ‘On’ (if you wish to skip this programme position) then press the OK button to store.

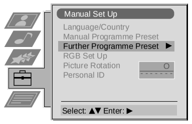
7. Repeat steps 5 and 6 if you wish to skip or unskip further programme positions.

8. Press the MENU button to remove the menu from the TV screen.

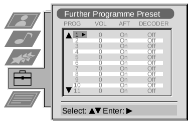
Using the Further Programme Preset feature

With this feature you can a) individually adjust the volume level of each channel, b) manually fine-tune the TV to obtain a better picture reception if the picture is distorted or c) preset the AV output for the programme positions of channels with scrambled signals (eg from a pay TV decoder). In this way a connected VCR records the unscrambled signal.

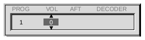
1. Press the MENU button on the remote control to display the menu on the TV screen.
2. Press the ▼ button to select the symbol on the menu screen then press ▶ to enter the ‘Set Up’ menu
3. Press the ▼ button to select ‘Manual Set Up’ then press ▶ to enter the ‘Manual Set Up’ menu.
4. Press the ▼ button to select ‘Further Programme Preset’ then press ▶ to enter the ‘Further Programme Preset’ menu.


Manual Set Up
Language/Country
Manual Programme Preset
Further Programme Preset ▶
RGB Set Up
Picture Rotation
Personal ID
Select: ▲▼ Enter: ▶

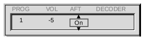
5. Press the ▲ or ▼ buttons to select the relevant programme number then press the ▶ button repeatedly to select a) VOL b) AFT or c) DECODER. The selected item changes colour.


Further Programme Preset
PROG
VOL
AFT
DECODER
Select: ▲▼ Enter: ▶

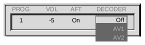
6. a)**VOL - Volume Offset**
   Press the ▲ or ▼ buttons to adjust the volume level (range -7 to +7) of the channel. Store by pressing the OK button. Repeat steps 5 and 6a if you wish to adjust the volume level of the other channels.


PROG
VOL
AFT
DECODER
1
0

   b) **AFT - Automatic Fine Tuning**
   Press the ▲ or ▼ buttons to fine tune the channel frequency over a range of -15 to +15. Press the OK button to confirm. Repeat steps 5 and 6b if you wish to fine tune other channels.


PROG
VOL
AFT
DECODER
1
-5
On

   c)**DECODER**
   Press the ▲ or ▼ buttons to select AV1 or AV2 for the programme position then press the OK button to confirm. You can now attach a decoder to the AV1 or the AV2 socket on the back of the TV and the picture from that decoder will appear on this programme number. Repeat steps 5 and 6c to preset the AV output for other programme positions.

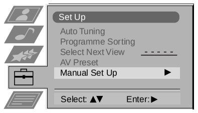

PROG
VOL
AFT
DECODER
1
-5
On
Off
AV1
AV2

7. Press the MENU button to remove the menu from the TV screen.

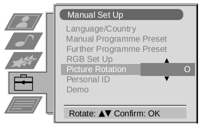
Adjusting the picture rotation

Because of the earth’s magnetism the picture might slant. In this case you can readjust the picture.

1. Press the MENU button on the remote control to display the menu on the TV screen.
2. Press the ▼ button to select the symbol on the menu screen then press ▶ to enter the ‘Set Up’ menu
3. Press the ▼ button to select ‘Manual Set Up’ then press ▶ to enter the ‘Manual Set Up’ menu.


Set Up
Auto Tuning
Programme Sorting
Select Next View
AV Preset
Manual Set Up ▶
Select: ▲▼ Enter: ▶

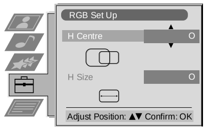
4. Press the ▼ button to select ‘Picture Rotation’ then press ▶ to enter the ‘Picture Rotation’ sub menu.
5. Press the ▲ or ▼ buttons to rotate the picture over a range of -5 to +5 then press the OK button to store.
6. Press the MENU button to remove the menu from the TV screen.


Manual Set Up
Language/Country
Manual Programme Preset
Further Programme Preset
RGB Set Up
Picture Rotation
Personal ID
Demo
0
Rotate: ▲▼ Confirm: OK

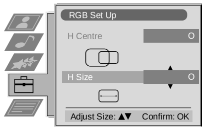
Adjusting the picture geometry for an RGB source

When connecting an RGB source such as a Sony Playstation you may need to readjust the geometry of the picture.

1. Press the button on the remote control to select the connected RGB source 1.
2. Press the MENU button to display the menu on the TV screen.
3. Press the ▼ button to select the symbol on the menu screen then press ▶ to enter the ‘Set Up’ menu
4. Press the ▼ button to select ‘Manual Set Up’ on the menu screen then press ▶ to enter the ‘Manual Set Up’ menu
5. Press the ▼ button to select ‘RGB Set Up’ on the menu screen then press ▶ to enter the ‘RGB Set Up’ sub menu.
6. Press ▶ to select H Centre then press ▲ or ▼ to adjust the centre of the picture over a range of -10 to +10. Store the new range by pressing the OK button.


RGB Set Up
H Centre
0
H Size
0
Adjust Position: ▲▼ Confirm: OK

7. Press ▶ to select H Size then press ▲ or ▼ to adjust the horizontal coordinates over a range of -10 to +10. Store the new range by pressing the OK button.


RGB Set Up
H Centre
0
H Size
0
Adjust Size: ▲▼ Confirm: OK

8. Press the MENU button to remove the menu from the TV screen.

Specifications

TV system
I

Colour system
PAL,
SECAM, NTSC 3.58, 4.43 (only Video In)

Channel coverage
See the ‘Channel Display Table’ below.

Picture tube
KV-28FX65: FD Trinitron WIDE, Approx. 71cm (28 inches)
KV-32FX65: FD Trinitron WIDE, Approx. 82cm (32 inches)

Rear Terminals

⇥1 / ⇤1	21-pin Euro connector (CENELEC standard) including audio/video input, RGB input, TV audio/video output.
⇥2 / ⇤2	21-pin Euro connector (CENELEC standard) including audio/video input, S-video input, Selectable audio/video output.
⇥3 / ⇤3	21-pin Euro connector (CENELEC standard) including audio/video input, S-video input, Monitor audio/video output.
⇤ L/G/S/I R/D/D/D	RCA connectors, variable output for audio signals.
╥	RF In

Front Terminals

⇥4	Video input -phono jacks
⇥4	Audio inputs - phono jacks
⇥4	S video input - 4 pin DIN
🎧	Headphones jack - minijack stereo

Sound output
Left/Right: 2x20W (Music Power)
2x10W (RMS)
Sub woofer: 30W (Music Power)
15W (RMS)

Power consumption
KV-28FX65: 170W
KV-32FX65: 170W

Dimensions (wxhxd)
KV-28FX65: Approx. 796x518x522mm
KV-32FX65: Approx. 883x567x562mm

Weight
KV-28FX65: Approx. 48kg
KV-32FX65: Approx. 64kg

Accessories supplied
RM-887 remote control (1)
IEC designated size AA batteries (2)

Optional accessory
TV Stand:
KV-28FX65: SU-28FX2
KV-32FX65: SU-32FX2

Other features
Flat display Trinitron tube, noise reduction, graphic equaliser, 2000 page TEXT memory, personal ID, sleep timer, NexTView.

Design and specifications are subject to change without notice.

Channel Display Table

	Receivable Channels	Channel Displays
I	B21..B69	C21..C69

Troubleshooting

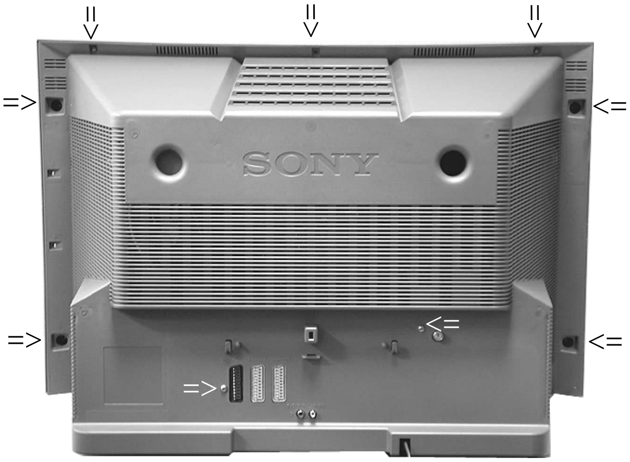
Here are some simple solutions to problems which may affect the picture and sound.

Problem	Suggested remedy
No picture (screen is dark), no sound	• Plug the TV in. • Press the ⓘ button on the front of the TV. • If the ⏻ indicator is on press the I/⏻ button or a numbered button on the remote control. • Check the aerial connection. • Turn the TV off for 3 or 4 seconds and then turn it on again using the ⓘ button on the front of the TV.
Poor or no picture (screen is dark), but good sound.	• Using the MENU system, select the Picture Adjustment display. Adjust the brightness, picture and colour balance levels. • From the Picture Adjustment display select RESET to return to the factory settings.
Good picture, no sound	• Press the ◿ button on the remote control. • If 🔇 is displayed on the screen, press the 🔇 button on the remote control.
No colour on colour programmes	• Using the MENU system, select the Picture Adjustment display and adjust the colour setting. • From the Picture Adjustment display select RESET to return to the factory settings.
Distorted picture when changing programmes or selecting Teletext	• Turn off any equipment connected to the scart connectors on the rear of the TV.
Remote control does not function	• Replace the batteries.
The standby indicator ⏻ on the TV flashes	• Contact your nearest Sony service centre.
Interference on picture from external equipment	• Reduce sharpness level.

- **If you continue to have these problems, have your TV serviced by qualified personnel.**
- **NEVER open the casing yourself.**

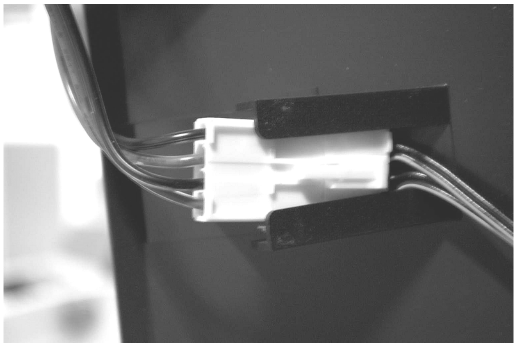
SECTION 2 DISASSEMBLY

2-1. Rear Cover Removal



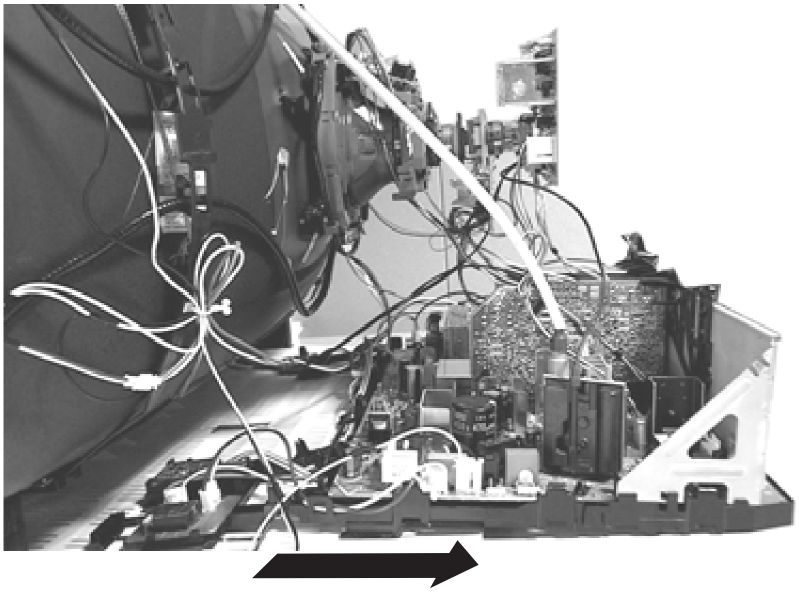
Remove the rear cover fixing screws indicated. Take care when removing the rear cover not to damage the speaker cables [Disconnect the speaker connector] as speakers are fitted inside the rear cover.

2-2. Speaker Connector Disconnection

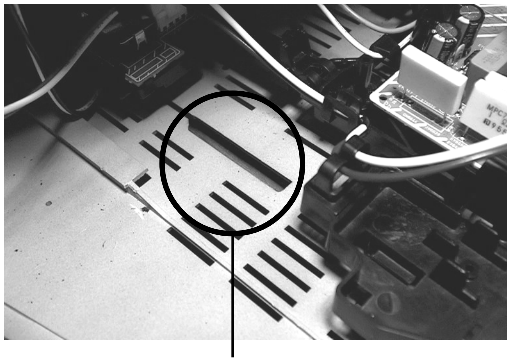


Before completely removing the rear cover disconnect the speaker connector which is located on the inside.

2-3. Chassis Removal and Refitting

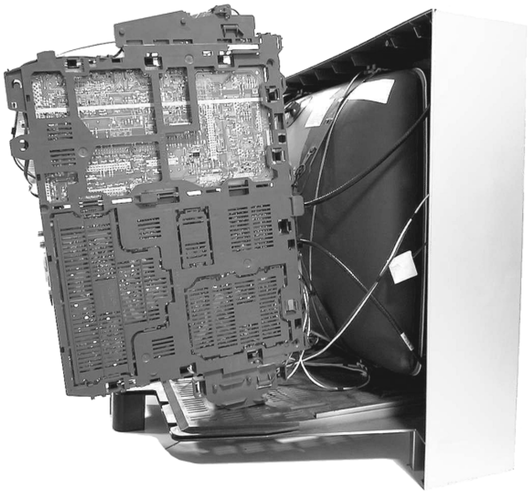


To remove lift the main bracket rear slightly and slide the chassis away from the beznet. Ensure that the interconnecting leads are released from their purse locks to prevent damage being caused.



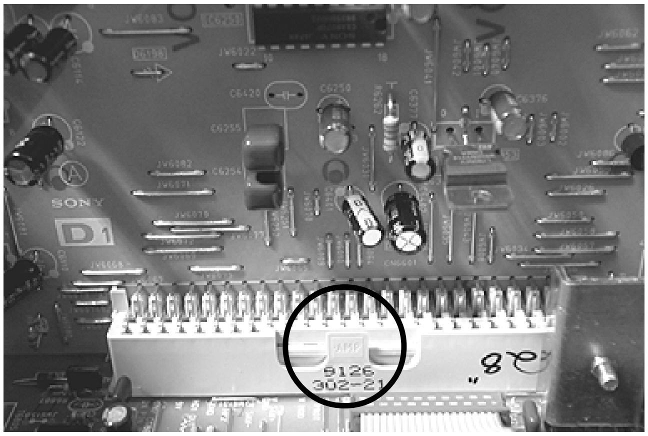
When refitting the chassis ensure that the main bracket is located in the beznet guide slots before sliding the chassis forwards. Refit the interconnecting leads in their respective purse locks.

2-4. Service Position



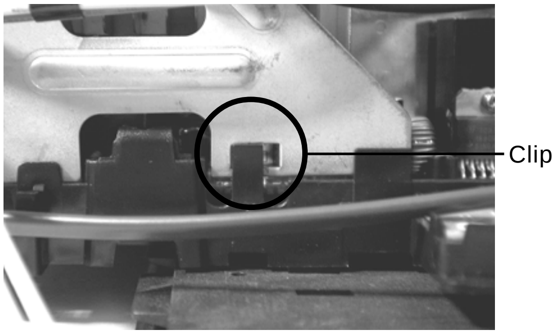
Position the PWB as indicated to access the solder side.
To gain access to the D Board follow the instructions on page 19. [Removal and Replacement of the main bracket bottom plates].

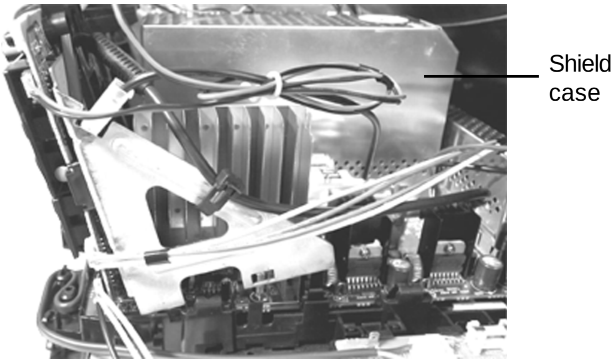
2-5. D1 Board Removal



To remove the D1 Board release the clip circled and gently remove the board in a vertical direction.

2-6. J Board Removal

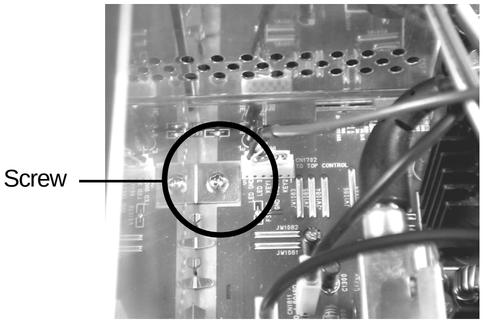




Release the two metal bracket support clips located on either side of the chassis. Tilt the bracket very slightly away from the shield case indicated. Release the J board board socket retaining clip and carefully lift the complete assembly vertically.

2-7. B1 Board Removal

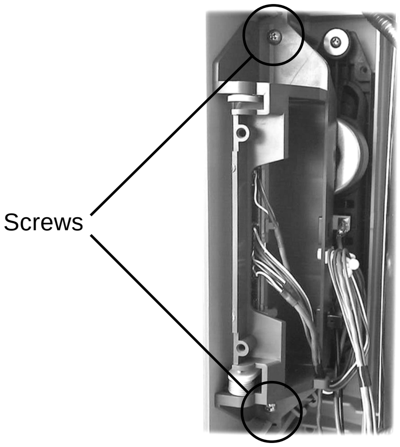
Follow the steps indicated in removal of the J board. With the assembly removed access to the B1 board shield is possible. To remove the shield locate and remove the two screws positioned on either side and at opposite ends of the shield. Release the B1 board clip and remove in a vertical direction. Please ensure that the screws are refitted after service.



Note :
Removal of the B1, E, and M1 printed circuit boards follows the same procedure of releasing the securing clips as indicated in the fig for D1 board removal.
Take care not to apply to great a pressure to the clips as this may cause damage.

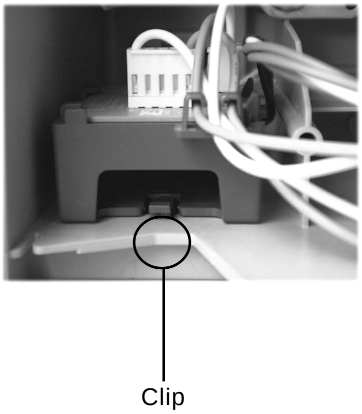
2-8. Side Control Module Removal

Remove the two screws fixing the user control module to the side of the set. The control module can then be removed by sliding it towards the rear of the set allowing access to the H7 Board.



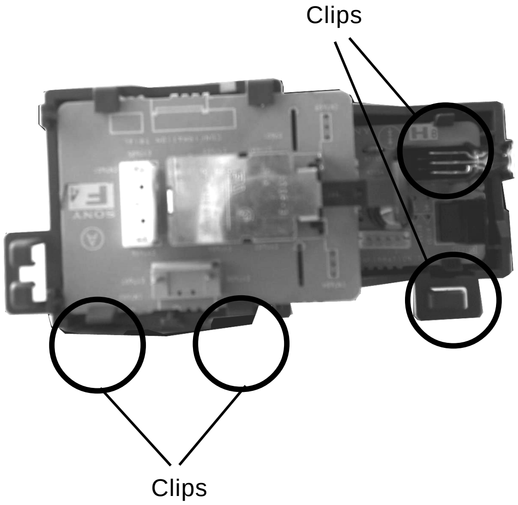
2-9. F4 Bracket Removal

Release the clip circled and pull the bracket towards the rear of the set. The bracket can then be removed to allow access to the boards.



2-10. F4 and H8 Board Removal

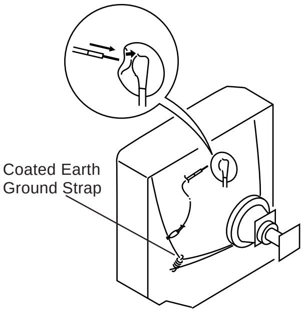
To remove the F4 and H8 Boards release the clips circled and ease the boards gently away from the support bracket.

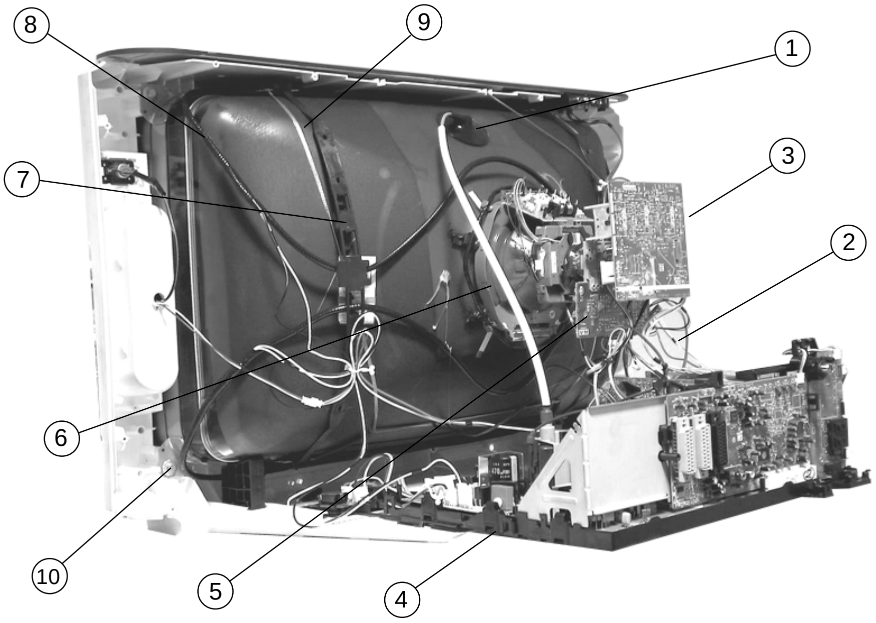


2-11. Picture Tube Removal

WARNING:
BEFORE REMOVING
THE ANODE CAP

High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT ***before*** attempting to remove the anode cap. Short between anode and CRT coated earth ground strap.

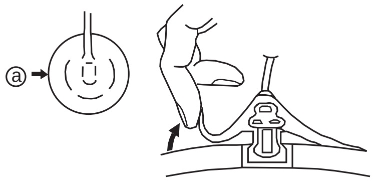




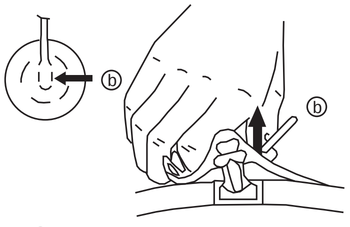
1. Discharge the anode of the CRT and remove the anode cap.
2. Unplug all interconnecting leads from the Deflection yoke, neck assy, degaussing coils and CRT grounding strap.
3. Remove the C Board from the CRT.
4. Remove the chassis assembly.
5. Loosen the Neck assembly fixing screw and remove.
6. Loosen the Deflection yoke fixing screw and remove.
7. Place the set with the CRT face down on a cushion and remove the Degaussing Coil holders.
8. Remove the Degaussing Coils.
9. Remove the CRT grounding strap and spring tentioners.
10. Unscrew the four CRT fixing screws [located on each CRT corner] and remove the CRT.
    [Take care not to handle the CRT by the neck.]

Removal of the Anode-Cap

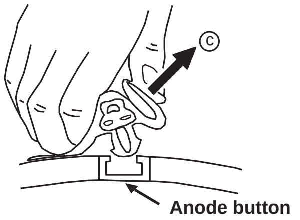
*** REMOVING PROCEDURES.**



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ



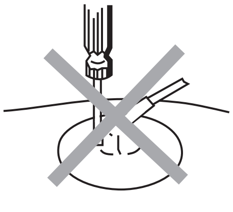
② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ

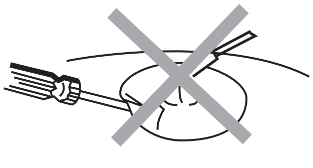


③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ

How to handle the Anode-Cap

1. To prevent damaging the surface of the anode-cap do not use sharp materials.
2. Do not apply too great a pressure on the rubber, as this may cause damage to the anode connector.
3. A metal fitting called a shatter hook terminal is fitted inside the rubber cap.
4. Do not turn the rubber foot over excessively, this may cause damage if the shatter hook sticks out.



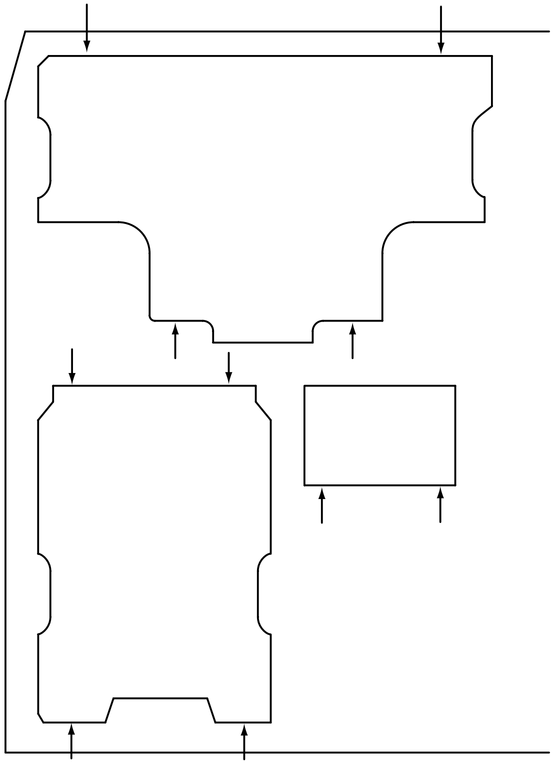


REMOVAL AND REPLACEMENT OF THE MAIN-BRACKET BOTTOM PLATES.

(1) REMOVING THE PLATES

In the event of servicing being required to the solder side of the D Board printed wiring board, the bottom plates fitted to the main chassis bracket require to be removed.
This is performed by cutting the gates with a sharp wire cutter at the locations indicated by the arrows.

Note : There are 3 plates fitted to the main bracket and secured by3 gates.
Only remove the necessary plate to gain access to the printed wiring board.

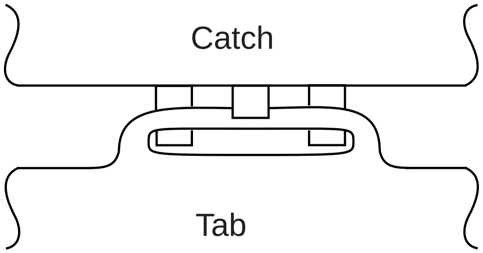


⚠ For safety reasons, on no account should the plates be removed and not refitted after servicing.

(2) REFITTING THE PLATES

Because the plates differ in size it is important that the correct plates are refitted in their original location.

Please note that the plates need to be rotated 180 degrees from their cut position to allow the tabs to be fitted into their catch positions.



SECTION 3 SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustments with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches to the following settings :

Contrast .... normal

Brightness .... normal

Carry out the adjustments in the following order :

3-1. Beam Landing.
3-2. Convergence.
3-3. Focus.
3-4. White Balance.

Note : Test equipment required.

1. Color bar/pattern generator.
2. Degausser.
3. Oscilloscope.
4. Digital multimeter.

3-1. Beam Landing

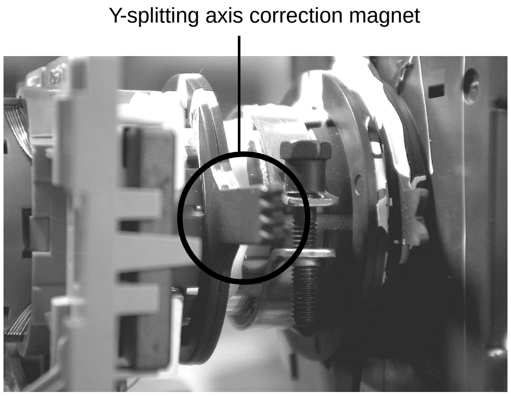
Preparation :

1. In order to reduce the influence of geomagnetism on the set's picture tube, face it in an easterly or westerly direction.
2. Switch on the TV set's power and degauss with a degausser.

(1) Adjustment of Correction Magnet for Y-Splitting Axis.

1. Input a crosshatch signal from the pattern generator.
2. Set the Picture control to minimum and confirm that the Brightness control is set to normal.
3. Position the neck assembly as indicated in Fig.3-3.
4. Loosen the deflection yoke fixing screw.
5. Move the deflection yoke as far forward as is possible.
6. Adjust the upper and lower pin symmetrically by opening or closing the Y-splitting axis correction magnets located on the neck assembly. [See Fig 3-1 and Fig 3-2]
7. Return the deflection yoke to its original position and re-tighten its fixing screw.

Fig.3-1



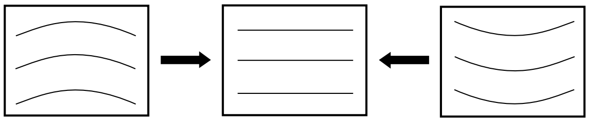


Fig.3-2

Caution :

High voltages are present on the Deflection yoke terminals - take care when handling the Deflection yoke whilst carrying out adjustments.

(2) Landing

Note : Before carrying out the following adjustments adjust the magnets as indicated below [See Fig.3-4].

1. Input a crosshatch signal from the signal generator.
2. Rough-adjust the focus and horizontal convergence.
3. Switch from the crosshatch pattern to an all-red pattern.
4. Move the deflection yoke backwards and adjust with the purity magnet so that the red is at the centre and it aligns symmetrically [See Fig.3-5].
5. Move the deflection yoke forward to the point where the entire screen just becomes red [Mark its position].
6. Move the deflection yoke further forward until the screen just changes colour at the edges. [Mark its position]
7. Position the deflection yoke between the two marks indicated above.
8. Input a crosshatch pattern from the pattern generator and rotate the deflection yoke so that the horizontal lines are parallel with the top and bottom of the screen.
9. When the position of the deflection yoke has been determined, fasten it with its fixing screw.
10. Switch the pattern generator to green then blue and confirm the purity.
11. If the beam does not land correctly in all the corners of the screen, use disk magnets to correct it. [Confirm the corner landing for green and blue]

Fig.3-3

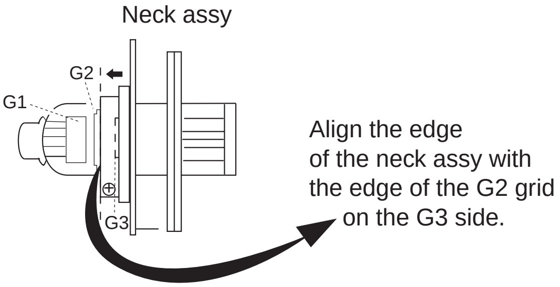
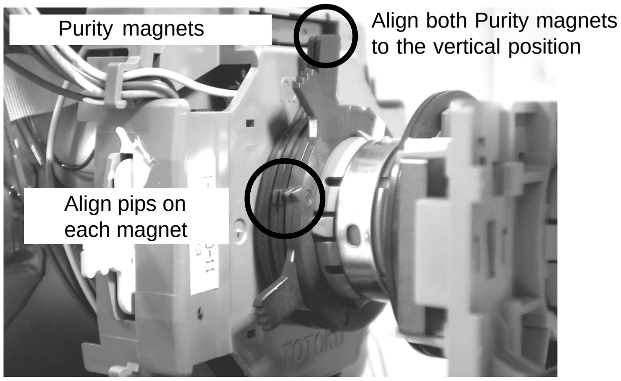


Fig.3-4


Purity magnets
Align both Purity magnets to the vertical position
Align pips on each magnet

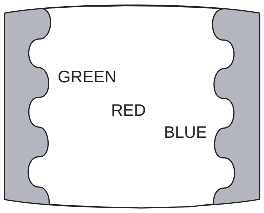
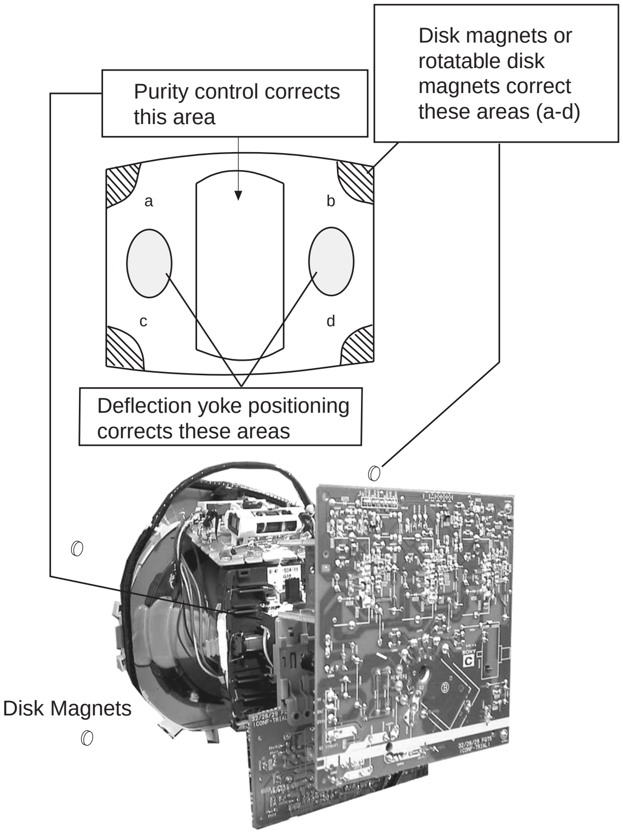
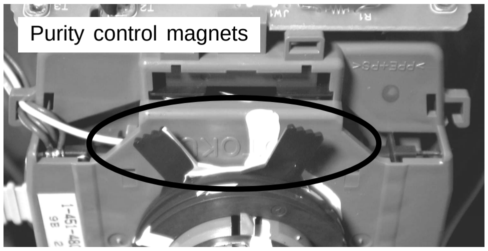

GREEN
RED
BLUE

Fig.3-5

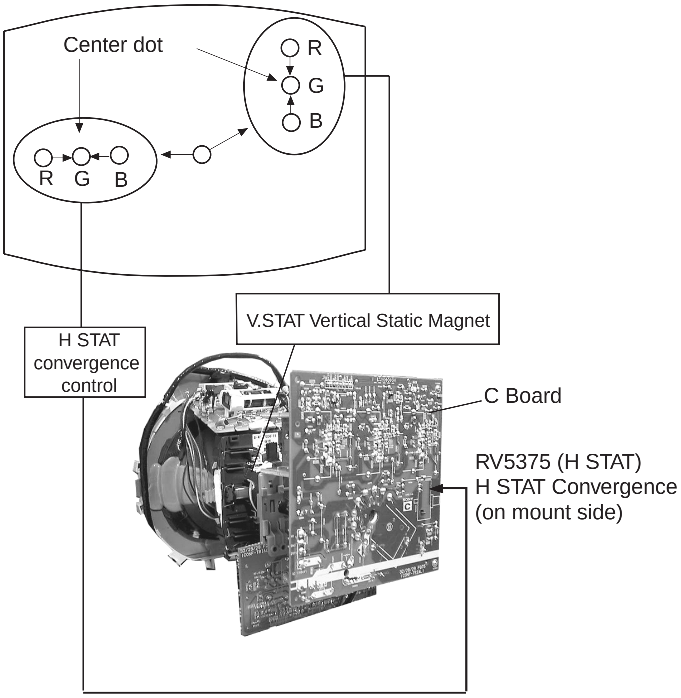

Disk magnets or rotatable disk magnets correct these areas (a-d)
Purity control corrects this area
a
b
c
d
Deflection yoke positioning corrects these areas
Disk Magnets


Purity control magnets

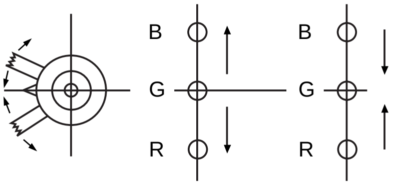
3-2. Convergence

(1) Screen centre convergence [Static convergence]

1. Input a dot pattern signal from the pattern generator.
2. Normalize the picture setting.
3. [Moving vertically], adjust the V.STAT magnet so that the vertical red, green and blue dots coincide at the centre of the screen.


Center dot
R
G
B
R G B
H STAT convergence control
V.STAT Vertical Static Magnet
C Board
RV5375 (H STAT)
H STAT Convergence
(on mount side)

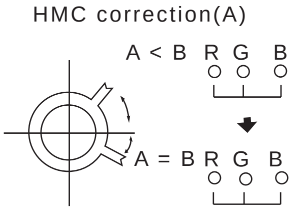
By opening or closing the V.STAT magnet, the red green and blue dots move in the direction indicated below.

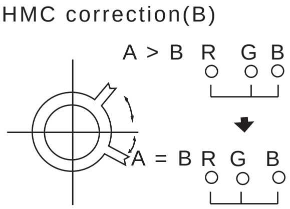


Note: Do not adjust the H.STAT by rotating the V.STAT magnets as this can affect the focus setting.

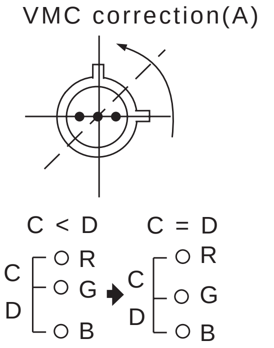
4. Correction for HMC [Horizontal mis-convergence] and VMC [Vertical mis-convergence] by using the BMC [Hexapole] magnet.

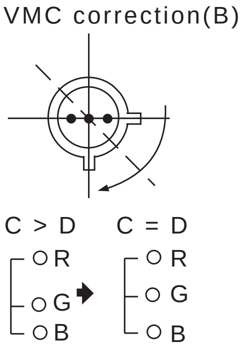
a). HMC correction by BMC [Hexapole] magnet and movement of the electron beam.


HMC correction(A)
A < B
R G B
A = B
R G B

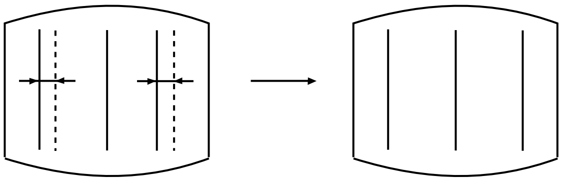

HMC correction(B)
A > B
R G B
A = B
R G B

b). VMC correction by BMC [Hexapole] magnet and movement of the electron beam.


VMC correction(A)
C < D
C = D
C
D
R
G
B
C
D
R
G
B

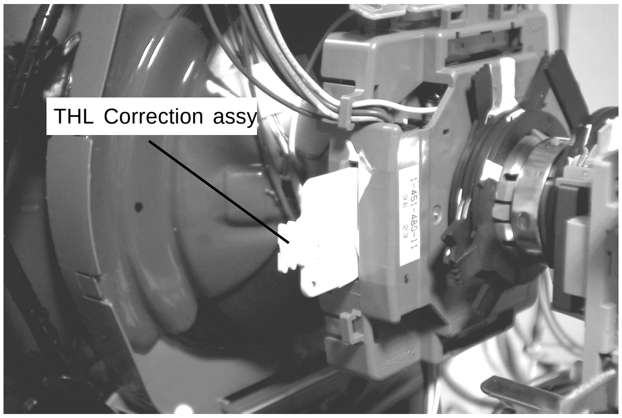

VMC correction(B)
C > D
C = D
R
G
B
R
G
B

HAMP Adjustment

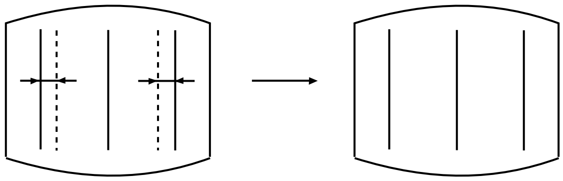


Adjust the HAMP using HAMPL and HAMPR registers in the Dynamic Convergence section of the service menu.

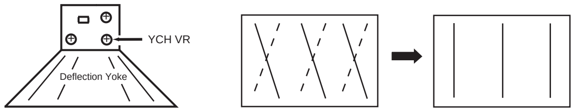
HTIL Adjustment


THL Correction assy

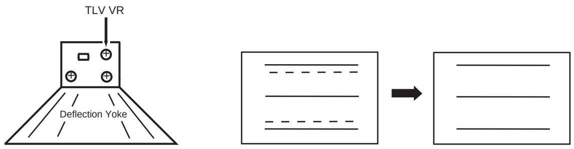
HTIL correction can be performed by adding a THL correction assembly to the Deflection yoke.



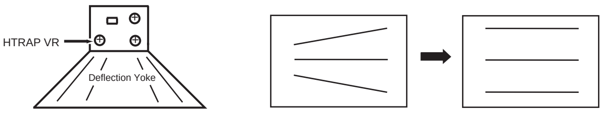
YCH Adjustment


YCH VR
Deflection Yoke

TLV Adjustment

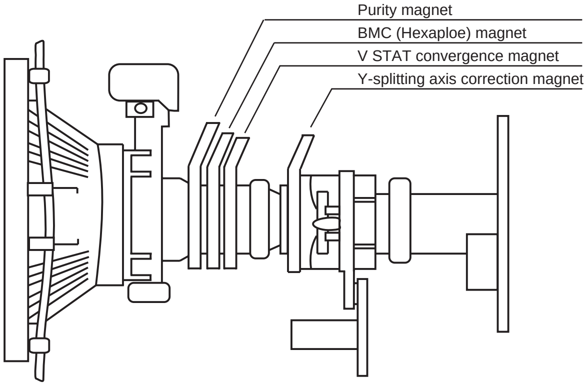

TLV VR
Deflection Yoke

H-TRAP Adjustment

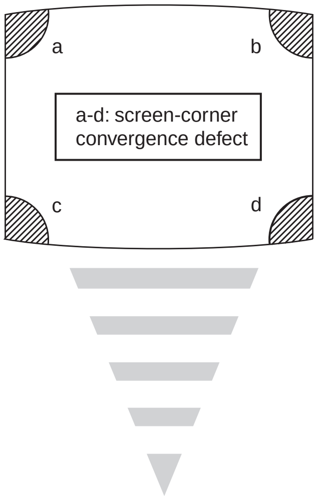

HTRAP VR
Deflection Yoke

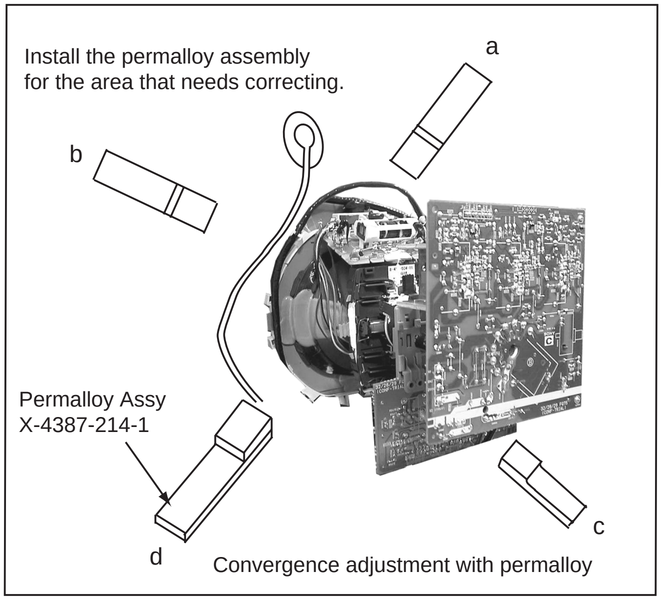
The H-TRAP should not be adjusted unless absolutely necessary as it affects the TLV settings.

Layout of each control


Purity magnet
BMC (Hexaploe) magnet
V STAT convergence magnet
Y-splitting axis correction magnet

Note : If you are unable to adjust the corner convergence properly, this can be corrected with the use of permalloy magnets.


a
b
a-d: screen-corner convergence defect
c
d

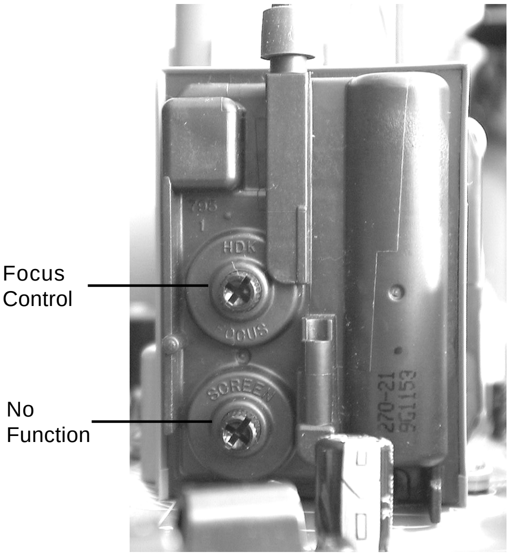

Install the permalloy assembly for the area that needs correcting.

a
b
Permalloy Assy
X-4387-214-1
c
d

Convergence adjustment with permalloy

3-3. Focus, Screen (G2) Adjustment

1. Receive a television broadcast signal.
2. Normalize the picture setting.
3. Adjust the focus control located on the flyback transformer to obtain the best focus at the centre of the screen.
   Bring only the centre area of the screen into focus, the magenta-ring appears on the screen. In this case, adjust the focus to optimize the screen uniformly.


Focus
Control
No
Function

G2 adjustment [RV5376]

1. Input a dot signal from the pattern generator.
2. Set the Picture, Brightness and Colour to minimum.
3. Apply 170V DC from an external power supply to the R, G and B cathodes of the CRT.
4. Whilst watching the picture, adjust the G2 control RV5376 [SCREEN] located on the C Board to the point just before the flyback return lines disappear.

3-4. White Balance Adjustment

[Adjustment in the service mode using the remote commander]

White balance adjustment for TV mode

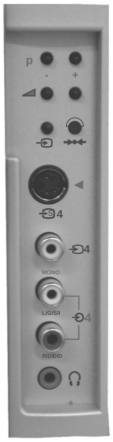
1. Input an all-white signal from the pattern generator.
2. Enter into the ‘Service Mode’ by pressing ‘TEST’, ‘TEST’ and ‘MENU’ ‘MENU’ on the Service Commander.
3. Select ‘Backend’ from the on screen menu display and press ‘OK’.
4. The ‘Backend’ menu will appear on the screen.[See Page 26]
5. Set the ‘Contrast’ to MAX.
6. Set the ‘R-Drive’ to 41.
7. Adjust the ‘G-Drive’ and the ‘B-Drive’ so that the white balance becomes optimum.
8. Press the ‘OK’ button to write the data for each item.
9. Set the ‘Contrast’ to MIN.
10. Set the ‘R-Cutoff’ to 31.
11. Adjust the ‘G-Cutoff’, and the ‘B-Cutoff’ with the left and right buttons on the remote commander so that the white balance becomes optimum.
12. Press the ‘OK’ button to write the data for each item.

SECTION 4 CIRCUIT ADJUSTMENTS

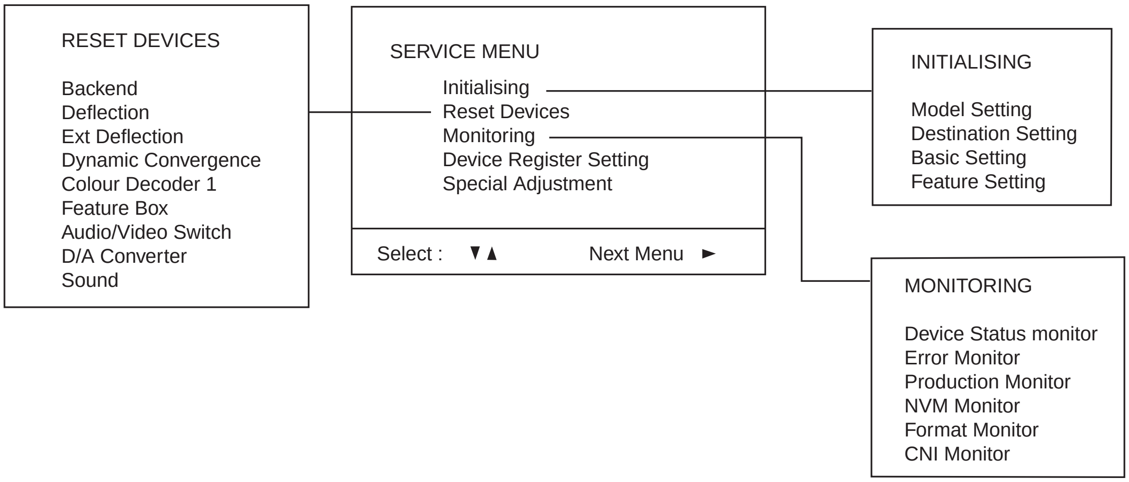
4-1. Electrical Adjustments

Service adjustments to this model can be performed using the supplied Remote Commander RM-887.

How to enter into the Service Mode



1. Turn on the main power switch of the set while pressing P + (plus) and P - (minus) buttons on the side pop out control panel.
2. When the picture appears release the P+ and P- buttons.
3. ‘TT’ will appear in the upper right corner of the screen.
4. Press the ‘MENU’ button twice on the remote commander to obtain the service menu on the screen.


RESET DEVICES
Backend
Deflection
Ext Deflection
Dynamic Convergence
Colour Decoder 1
Feature Box
Audio/Video Switch
D/A Converter
Sound
SERVICE MENU
Initialising
Reset Devices
Monitoring
Device Register Setting
Special Adjustment
Select : ▼▲
Next Menu ►
INITIALISING
Model Setting
Destination Setting
Basic Setting
Feature Setting
MONITORING
Device Status monitor
Error Monitor
Production Monitor
NVM Monitor
Format Monitor
CNI Monitor

4. Push the joystick up or down on the remote commander to select the adjustment item.
5. Push the right button to proceed to the next menu.
6. If the required adjustment item is ‘Deflection’, push the down button to move to ‘Deflection’.
7. Push the joystick to the right to enter into ‘Deflection’.
8. Change the data in order to comply with each standard.

Note :

- Before performing any adjustments ensure that the correct model has been selected in the ‘Model Setting’ menu.
- After carrying out the service adjustments, to prevent the customer accessing the ‘Service Menu’ switch the TV set OFF and then ON.

Initialising Menu

Initialising

Model Setting
Destination Setting
Basic Setting
Feature Setting

Select : Next menu:

Model Setting

The menu contains a list with all the available models of this software to set up the TV set in an easy way. The selection of a model is setting data for its features and hardware resources which cannot be detected by the automatic power on H/W detection as well as a special *model byte* to get an unique model identification for models which cannot be differed by features and hardware resources (e.g. KV-28FC60 and KV-28FC60Z)

Before data is set, the user will be asked if he really wants to set a new model. If the user agrees, automatically the destination setting menu is shown.

Model Setting

1	KV-28FC60	Reset
2	KV-28FC60Z	
3	KV-29FC60	
4	KV-32FC60	
5	KV-32FC60Z	
6	KV-34FC60	
7	KV-28FQ75	
8	KV-29FQ75	
9	KV-32FQ75	
10	KV-34FQ75	
11	KV-28FS70	
12	KV-32FS70	
13	KV-36FS70	
14	KV-28FX65	
15	KV-29FX65	
16	KV-32FX65	
17	KV-29FQ65	

BLACK = No Conformity
GREEN = Compatible Model
RED = Conformity for all data

Table.4-1

Indication of Model Compatibility.

Black:
If any data does not match to specific model, the model name is displayed in black.

Green:
All data which is checked by model setting menu concurs to model except model byte.

Red:
All data which is checked by model setting menu concurs to model including model byte.

Note:
After selecting a model, it may be necessary to reset some devices to get the correct data. (Treble/Bass Offset of Sound, deflection adjustments, ...)

Basic Setting

Basic setting

No	Descr	Min	Max	Data
1	Sys.B/G	OFF	ON	ON
2	Sys.D/K	OFF	ON	ON
3	Sys.L	OFF	ON	OFF
4	Sys.I (UK)	OFF	ON	OFF
5	Sys.I (IRL)	OFF	ON	ON
6	TXTNat.option	1	4	3
7	16:9 CRT	OFF	ON	OFF
8	Sub-woofer	OFF	ON	ON
9	Auto stand-by	OFF	ON	ON
10	Comb-filter	OFF	ON	OFF
11	Auto YC det	OFF	ON	ON
12	Auto comb det	OFF	ON	OFF
13	AV2 Available	OFF	ON	ON
14	AV3 Available	OFF	ON	ON
15	AV4 Available	OFF	ON	ON
16	AV3 Fr & rear	OFF	ON	OFF
17	SECAM Tape	OFF	ON	OFF
18	AV1 Sound Mute	OFF	ON	OFF

Table.4-2

Feature Setting

Feature setting

No	Descr	Min	Max	Data
1	EPG	OFF	ON	ON

Table.4-3

Device Register Setting

Backend
Deflection
Ext Deflection
Dynamic Convergence
Colour Decoder 1
D/A Converter
Feature High End
Audio / Video Switch
Sound

Table.4-4

Audio / Video Switch

No	Descr	Def	Min	Max	Data
1	CVOUT1	0	0	7	0
2	CVOUT2	2	0	7	2
3	GD1 SW	OFF	OFF	ON	OFF
4	GD2 SW	OFF	OFF	ON	OFF
5	YCOUT 1	0	0	7	0
6	YCOUT 2	1	0	7	1
7	LO0CTRL	OFF	OFF	ON	OFF
8	LO1CTRL	OFF	OFF	ON	OFF
9	AOUT 1	3	0	7	3
10	AOUT 2	3	0	7	3
11	AOUT 3MUTE	OFF	OFF	ON	OFF
12	ZCD SW	ON	OFF	ON	ON
13	AOUT 3	3	0	7	3
14	GROUP DEL	15	0	31	15
15	AOUT3 L/R	0	0	3	0
16	AOUT3VOLF	0	0	7	0
17	AOUT3VOLC	3	0	7	3

Table.4-5

Special Adjustment

No	Descr	Min	Max	Data
1	RGB level	0	7	0
2	RGB Gain	0	31	8
3	RGB PatLevel	0	7	0
4	RGB Patgain	0	31	15
5	Extra Fw	0	255	255
6	EPG Chks Check	OFF	ON	ON
7	Slicer High	OFF	ON	ON
8	FCW Wide	OFF	ON	ON
9	Mpeg NR	OFF	ON	OFF
10	Notch Filter	OFF	ON	OFF
11	NLD Step	-7	0	0
12	PKD Step	-15	0	0
13	CRD Step	0	15	7
14	SHP Step	-10	0	-3
15	COL Step	-10	0	-1
16	SHP gain Step	-5	0	0
17	VM level Step	-3	0	0
18	NTSC Auto YC AV2	OFF	ON	OFF
19	NTSC Auto YC AV3	OFF	ON	OFF
20	RGB Disable	OFF	ON	OFF
21	Intern GD	OFF	ON	ON
22	AV2 YC Mix Out	OFF	ON	ON

Table.4-6

Backend

No	Descr	Def	Min	Max	Data
1	R-on	ON	OFF	ON	ON
2	G-on	ON	OFF	ON	ON
3	B-on	ON	OFF	ON	ON
4	D-col	OFF	OFF	ON	OFF
5	Color-axis	2	0	3	2
6	Contrast	40	0	63	40
7	Limit-Luv	3	0	3	3
8	Hue	32	0	63	32
9	Colour	31	0	63	31
10	CTI-Level	2	0	3	2
11	Brightness	31	0	63	31
12	Gamma	3	0	3	3
13	Sharpness	30	0	63	30
14	R-Drive	41	0	63	41
15	G-Drive	41	0	63	30
16	B-Drive	41	0	63	23
17	ABL-Mode	0	0	3	0
18	Sub Bright	31	0	63	22
19	VM-Level	2	0	3	1
20	R-Cutoff	31	0	63	31
21	Preover	2	0	3	2
22	G-Cutoff	31	0	63	23
23	DPIC-Level	1	0	3	1
24	B-Cutoff	31	0	63	29
25	DC-Tran	0	0	3	0
26	Sub-Cont	7	0	15	9
27	LRGB2-Lvl	8	0	15	0
28	P-Abl	15	0	15	15
29	Sharp.Fo	ON	OFF	ON	ON
30	Aging-W	OFF	OFF	ON	OFF
31	Aging-B	OFF	OFF	ON	OFF
32	CB-offset1	11	0	15	11
33	CR-offset1	11	0	15	11
34	CB-offset2	7	0	15	7
35	CR-offset2	7	0	15	7
36	Sub Color	0	-8	8	-2

Table.4-7

Colour Decoder 1

No	Descr	Def	Min	Max	Data
1	Tint	31	0	63	31
2	P/N Gw	OFF	OFF	ON	OFF
3	P/N ID	OFF	OFF	ON	OFF
4	Sub Colour	7	0	15	7
5	Sub Contr	8	0	15	8
6	Sharp FO	1	0	3	1
7	Sharp EQ	2	0	3	2
8	Sharp Gain	8	0	15	8
9	Y-Out Lev	35	0	63	35
10	BS Point	0	0	3	0
11	C-Out Lev	45	0	63	45
12	DC Rest	0	0	3	0
13	BPF FO	2	0	3	2
14	BPF Q	1	0	3	1
15	Filter Sw	OFF	OFF	ON	OFF

Table.4-8

Colour Decoder 1 (cont)

No	Descr	Def	Min	Max	Data
16	C-Trap Sw	0	0	1	0
17	S-D Trap	ON	OFF	ON	ON
18	LPF	ON	OFF	ON	ON
19	Y-DL	8	0	10	8
20	N-Comb	ON	OFF	ON	ON
21	Video Sel	0	0	15	0
22	RGB Sel	0	0	3	0
23	Halftone	OFF	OFF	ON	OFF
24	CrOFF.1	7	0	15	7
25	CbOFF.1	7	0	15	7
26	CrOFF.2	7	0	15	7
27	CbOFF.2	7	0	15	7
28	VCD Freq	3	0	7	3
29	VCD Mode	0	0	3	1
30	AFC SENS	1	0	3	1
31	MVM	OFF	OFF	ON	OFF
32	S-R-Y Adj	6	0	15	6
33	S-B-Y Adj	4	0	15	4
34	BELL/HPF	2	0	3	2
35	BELL FO	OFF	OFF	ON	OFF
36	S-GP	0	0	3	0
37	S ID	OFF	OFF	ON	OFF
38	RGB1 ENB	OFF	OFF	ON	OFF
39	HS-PH	1	0	1	0
40	S/N RATIO	3	0	3	3

Table.4-9

Dynamic Convergence

No	Descr	Def	Min	Max	Data
1	Range	63	0	63	63
2	V Stat	36	0	63	17
3	H Stat	33	0	63	31
4	H amp L	37	0	63	33
5	H amp R	36	0	63	33
6	Up Y	31	0	63	31
7	Low Y	33	0	63	31
8	Y up L	30	0	63	45
9	Y up R	30	0	63	31
10	Y low L	31	0	63	31
11	Y low R	30	0	63	45
12	Mbow Up L	31	0	63	31
13	Mbow Up R	32	0	63	31
14	Mbow Low L	32	0	63	31
15	Mbow Low R	32	0	63	31
16	T Cor PCtrl	OFF	OFF	ON	OFF
17	Top Cor Pin	31	0	63	31
18	B Cor PCtrl	OFF	OFF	ON	OFF
19	Bot Cor Pin	43	0	63	31

Table.4-10

Sound

No	Descr	Def	Min	Max	Data
1	Ref.Level	40	0	20	40
2	Auto-gain	ON	OFF	ON	ON
3	Ana-in	0	0	1	0
4	Carr-mute	ON	OFF	ON	ON
5	Clock out	ON	OFF	ON	ON
6	AM-gain	ON	OFF	ON	ON
7	Clip mode	0	0	2	0
8	SCART1 Vol	79	0	127	79
9	SCART2 Vol	79	0	127	79
10	SCART Pr	27	0	127	27
11	I2S1-pr	16	0	127	16
12	I2S2-pr	16	0	127	16
13	FM pr	27	0	127	27
14	BG Nic-pr	53	0	127	53
15	L Nic-pr	59	0	127	59
16	DK Nic-pr	53	0	127	53
17	I Nic-pr	97	0	127	97
18	Irl Nic-pr	97	0	127	97
19	AVC-Decay	2	0	8	2
20	SubW-vol	0	-127	0	0
21	SubW-freq	20	5	40	20
22	SubW-HPass	OFF	OFF	ON	OFF
23	Spat-stre	+127	0	-1	127
24	Spat-Coeff	0	0	8	0
25	Bass offs	0	-3	+3	0
26	Treble offs	0	-3	+3	0
27	Loudn offs	0	0	9	0
28	Hp-Voloffs	-2	-5	+5	-2
29	M-S Limit	+30	-128	+127	30
30	M-B Limit	-30	-128	+127	-30
31	S-M Limit	+12	-128	+127	12
32	S-B Limit	-20	-128	+127	-20
33	B-M Limit	-12	-128	+127	-12
34	B-S Limit	+20	-128	+127	20
35	Err.Max	40	0	255	40
36	Err.Min	18	0	255	18
37	Vol.Offs	0	-6	0	-4

Table.4-11

Ext. Deflection

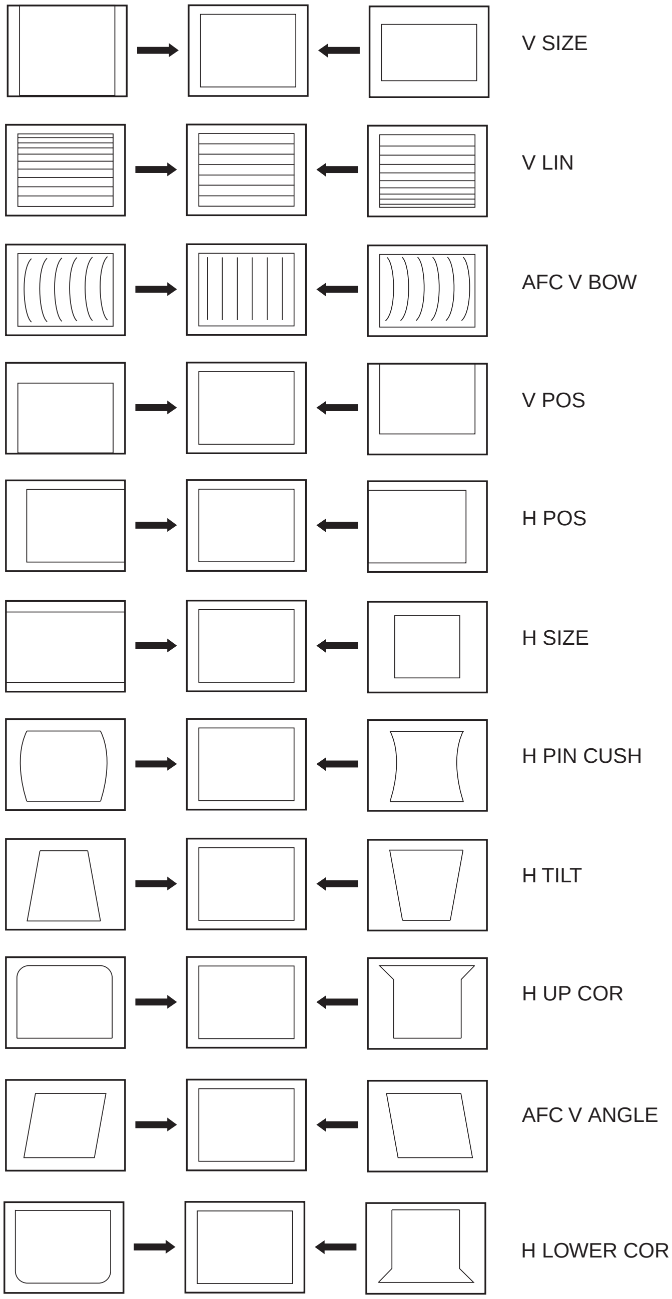
No	Descr	Def	Min	Max	Data
1	Linearity	127	0	255	127
2	H Centre	31	0	63	31
3	H Trap	31	0	63	31
4	Rotation	0	0	255	0
5	FocusPhase	127	0	255	127

Table.4-12

Deflection

No	Descr	Def	Min	Max	Data
1	V-Size	31	0	63	35
2	V-Position	31	0	63	30
3	V-Comp	1	0	3	0
4	V-Linear	7	0	15	7
5	S-Corr	7	0	15	7
6	H-Size	31	0	63	27
7	EW-DC	OFF	OFF	ON	OFF
8	Akb Tim2	OFF	OFF	ON	OFF
9	Pin-Amp	31	0	63	29
10	H-Comp	0	0	3	0
11	Up-Cpin	31	0	63	35
12	M-Pin	2	0	3	2
13	Lo-CPin	31	0	63	34
14	Trapezium	7	0	15	6
15	H-Position	31	0	63	25
16	VblKw	0	0	3	0
17	AFC-Bow	7	0	15	7
18	AFC-Angle	7	0	15	10
19	Left-Blk	38	0	63	52
20	Right-Blk	12	0	63	11
21	V-Freerun	0	0	3	0
22	V-Aspect	47	0	63	47
23	Zoom-Sw	OFF	OFF	ON	OFF
24	U-Scan	OFF	OFF	ON	OFF
25	V-Scroll	31	0	63	31
26	Akb-Tim	0	0	3	2
27	Up-Vlin	0	0	15	0
28	Lo-Vlin	0	0	15	0

Table.4-13



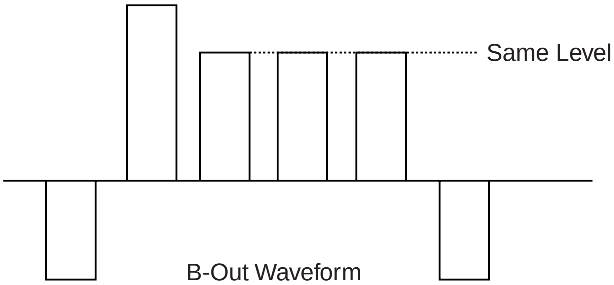
Deflection System Adjustment

1. Enter into the service mode and select ‘Deflection’ from the menu. The ‘Deflection’ adjustment menu will be displayed.
2. Select and adjust each item to obtain the optimum image.

4-2. Volume Electrical Adjustments

Sub Colour Adjustment

1. Input a PAL colour bar signal.
2. Connect an oscilloscope to CN5400 pin 5 located on the C Board.
3. Enter into the ‘Service Mode’.
4. Choose ‘Backend’ from the menu.
5. Adjust ‘Sub Colour’ data so that the right sides of the waveform are of equal height.



B-Out Waveform

4-3. TEST MODE 2:

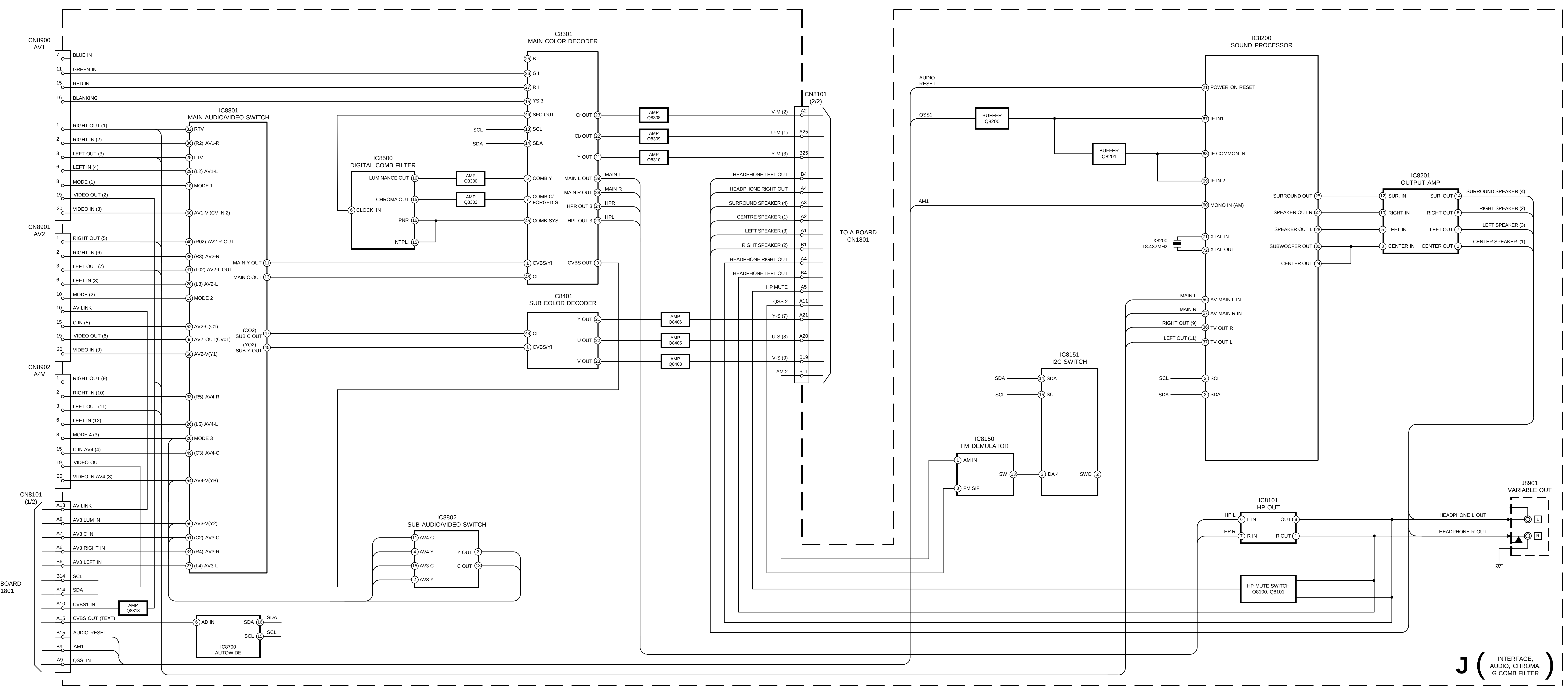
Is available by pressing the ‘TEST’ button twice, OSD ‘TT’ appears. The functions described below are available by selecting the two numbers. To release the ‘Test mode 2’, press 0, 10, 20 ... twice or switch the TV set into Stand-by mode. Pressing the two Local Control buttons (+ and -) during power ON will also switch into ‘TT’ mode.
In ‘TT’ mode, it is possible to remove the Menu from the screen by pressing the Speaker Off button once. Pressing the Speaker OFF button a second time will cause the Menu to reappear. The function is kept even when the menu is not displayed on screen !!.

00	'TT' mode off
01	Picture maximum
02	Picture minimum
03	Set speaker/headphone Volume to 30%
04	Set speaker/headphone Volume to 50%
05	Set speaker/headphone Volume to 65%
06	Set speaker/headphone Volume to 80%
07	Ageing mode
08	Shipping Condition
10	No function
11	Sub picture adjustment
12	Sub colour adjustment
13	Display software version and TV set configeration
14	No function
15	Picture Rotation - Auto Function -5 -> 0 -> + 5
16	Picture level 50%
17	Audio mute on
18	No function
19	Sub brightness adjustment
20	No function
21	Destination A includes text settings, display TV status
22	Destination L includes text settings, display TV status
23	Destination E includes text settings, display TV status
24	Destination U includes text settings, display TV status
25	Destination D includes text settings, display TV status
26	Destination B includes text settings, display TV status
27	Destination K includes text settings, display TV status
28	Destination R includes text settings, display TV status
30	No function
31	Geometry Adjustment 1
32	Geometry Adjustment 2
33	Error monitor
34	No function
35	CRT 4:3 <> 16:9 ; Display TV status
36	Line 23 detection switch
37	Velocity Modulation (VM) test
38	No function
39	No function
40	No function
41	Screen mode check
42	Re-initialise geometry
43	No function
44	No function
45	No function
46	Reserved for dealer commander
47	Re-initialise NVM
48	Set NVM as non virgin
49	Set NVM as virgin
50	No function
51	Set Dolby volume to 90%
52	Dolby on left speaker only
53	Dolby on right speaker only
54	Dolby on left centre only
55	Dolby on surround speaker only
56	No function
57	No function
58	No function
59	No function
60	No function
61	Service mode
62	Production mode
63	Copy the picture reset data from ROM into the picture reset location of NVM
64	Copy the actual adj picture data from NVM to reset location of NVM
65	Reset error codes
66	No function
67	No function
68	Ignore error on
69	Ignore errors off
70	No function
71	No function
72	No function
73	Clear all programmes except 1-5 and all station labels
74	Adjustment for PIN Amp/Upper Corner Pin for EPG
75	Adjustment for Lower Corner Pin/ Trapezoid for EPG
76	No function
77	No function
78	No video blanking
79	Reset NVM Addresses 0EFF - 0FFF
80	No function
81	Smart Link test signal on AV2 Pin 10.
82	Horizontal centre adjustment for MID-X input main picture. Adjustment is done with left and right joystick button, released by "TV" or "OK" buttons.
83 - 86	No function
87	Personal ID reset
88	Parental Lock off
89	OSD mute on/off
90	No function
91	No function
92	No function
93	Reserved for software group only
94	No function
95	Dolby Low Pass Filter ON in surround channel
96	Dolby Low Pass Filter OFF in surround channel
97	No action
98	No action
99	No function

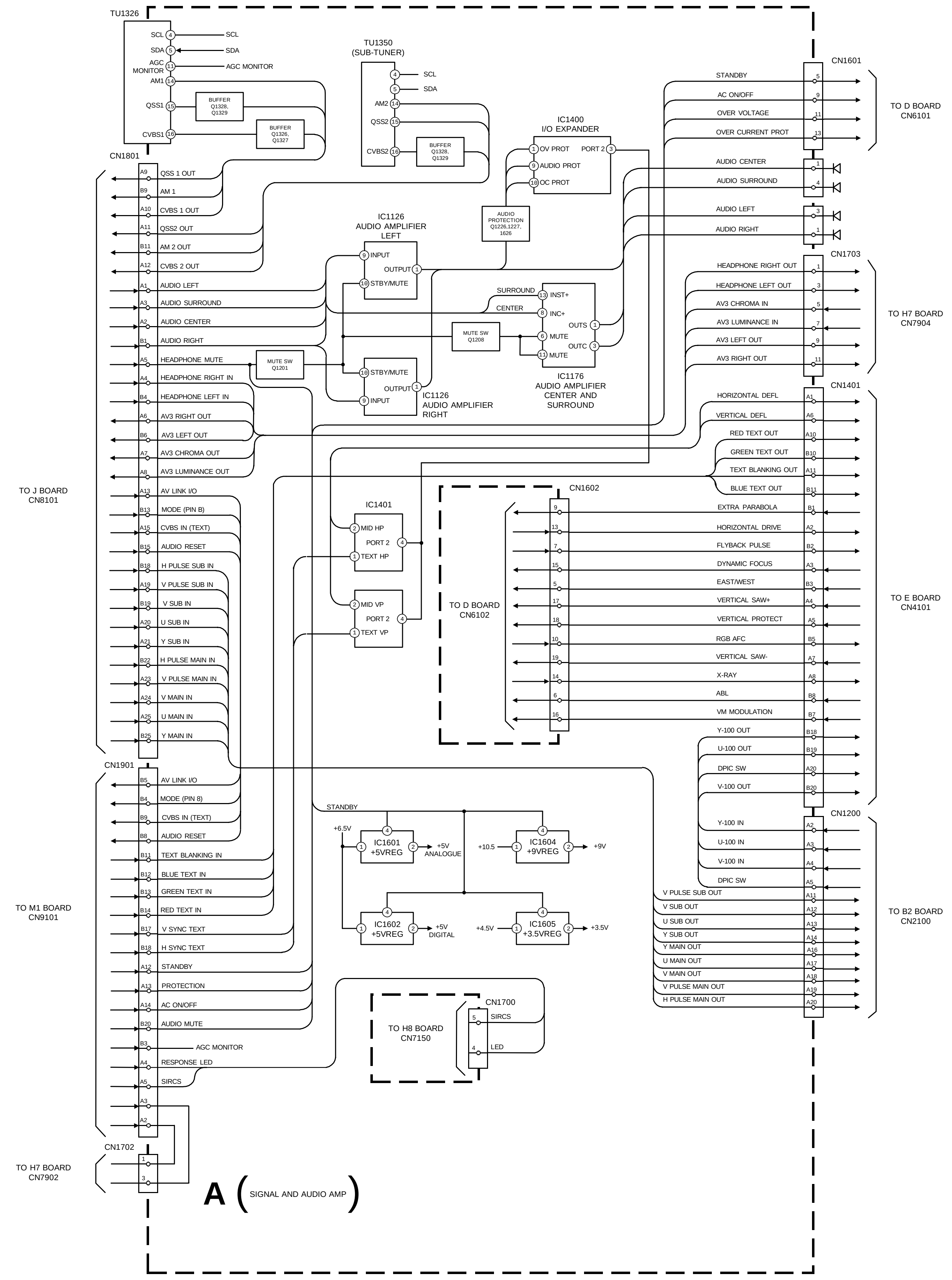
5-1. BLOCK DIAGRAMS (1)

F1 (AC FILTER FUSE)
CN7611
F7626
CN7633
F4 (POWER SWITCH)
CN7602
S7601
POWER
CN7601
D (POWER SUPPLY AND DEFLECTION)
CN6700
AC IN
AC IN
CN6620
DGC
DGC
CN6700
DGC CHECK
DGC CHECK
FOR CHECK
RELAY RY601
RELAY RY602
MAIN RECT D6604
T6601
+4.5V RECT D6620
+4.5V
+6.5V RECT D6619
+6.5V
+10.5V RECT D6616
+10.5V
+135V RECT D6617
+135V
+22V RECT D6618
+22V
+135V
T6600 PRT
IC603 POWER MODULE
IC6604 REG OUT
T6651
IC6651
D
S
C
IC6667
Q6667
IC6654 +5VREG
+5V
OVER CURRENT PROT
OVER VOLTAGE PROT
AC ON/OFF
+5V STANDBY
CN6101
TO A BOARD CN1601
CN6102
TO A BOARD CN1602
CN6600
E/W
AFC PULSE
EX PARA
RGB AFC
HD IN
DYN FOCUS
VMOD
V PROT
V SAW +
V SAW -
HD2 OUT
HD1 OUT
H SAW
IN PIN
L IN
H CENTER
HP2
HP1
ABL
DF DRIVE
TO D1 BOARD CN6601
IC6700 V-OUT
V OUT Q6700
H-OUT DRIVE Q6801
H-OUT DRIVE Q6802
HDT T6801
HDT T6802
H-OUT Q6803, Q6804
+135V
IC6801
AMP Q6809 Q6810
T6805
Q6808
Q6805
Q6806
T6804 FBT
+200V RECT D6805
+200V
+135V
-15V RECT D6809
-15V
+15V RECT D6808
+15V
DFT T6852
DF DRIVE Q6851
HV
FV
TO PICTURE TUBE HV
TO C BOARD FV
CN6500
G2
H
TO C BOARD CN5601
CN6611
V+
V-
H-
H+
DY ASSY
V- DY+
V- DY-
V DY
H DY
H- DY-
H- DY+
H8 (LED, IR RECEIVER)
CN7100
TO A BOARD CN1700
RESP
+12V
SIRCS
+5V STBY
IC7150 RECEIVER
CN7103
TO A BOARD CN1703
HEADPHONE R IN
HEADPHONE L IN
J7925 HEADPHONE
AV3 CHROMA OUT
AV3 LUMINANCE OUT
Y/C
VIDEO
AV3 L OUT
AV3 R OUT
L
R
J7900
CN7102
TO A BOARD CN1702
KEY 2
KEY 1
S7900 S7901 S7902
H7 (SIDE AV, HEADPHONE AND CONTROL SWITCH)

5-1. BLOCK DIAGRAMS (2)

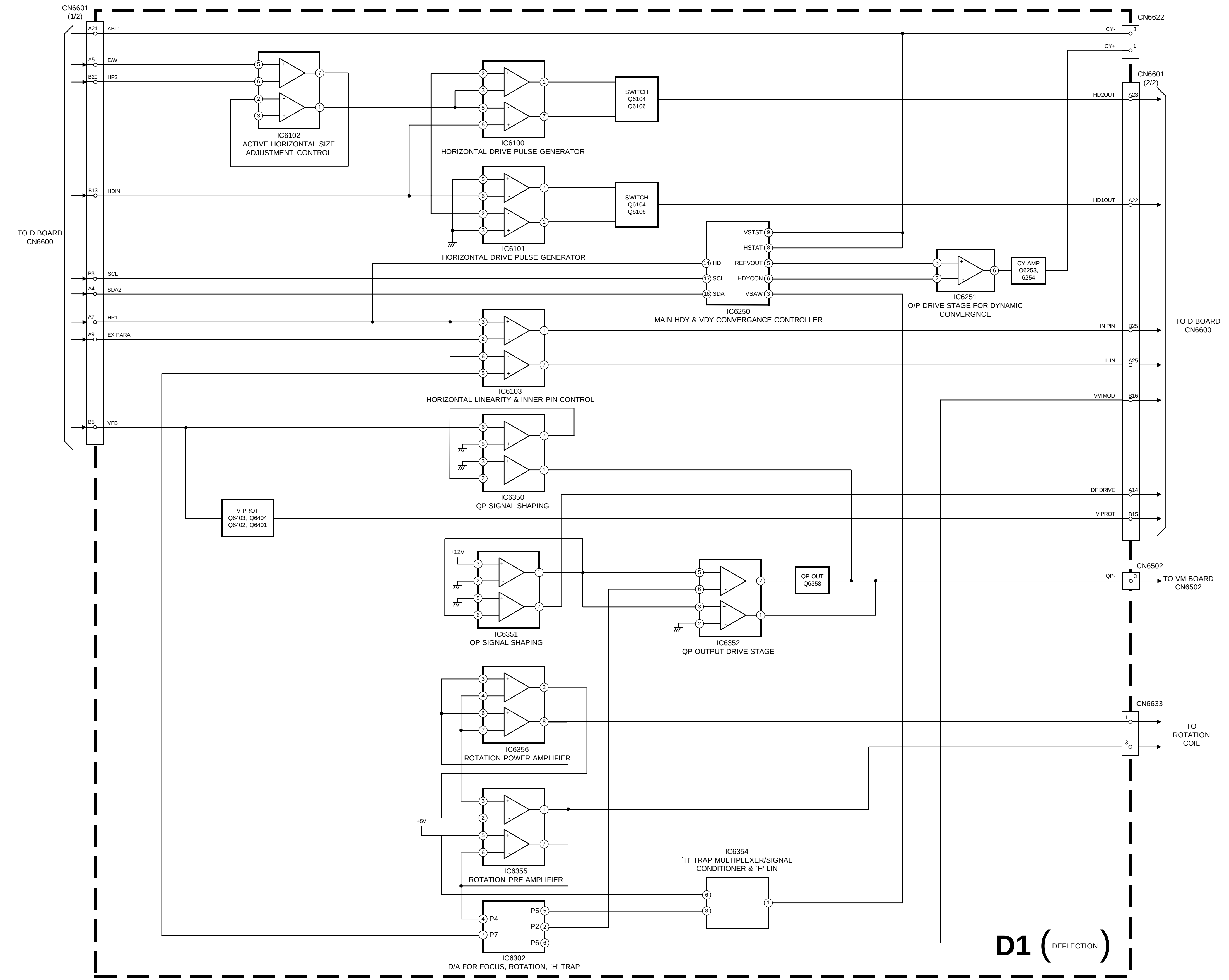


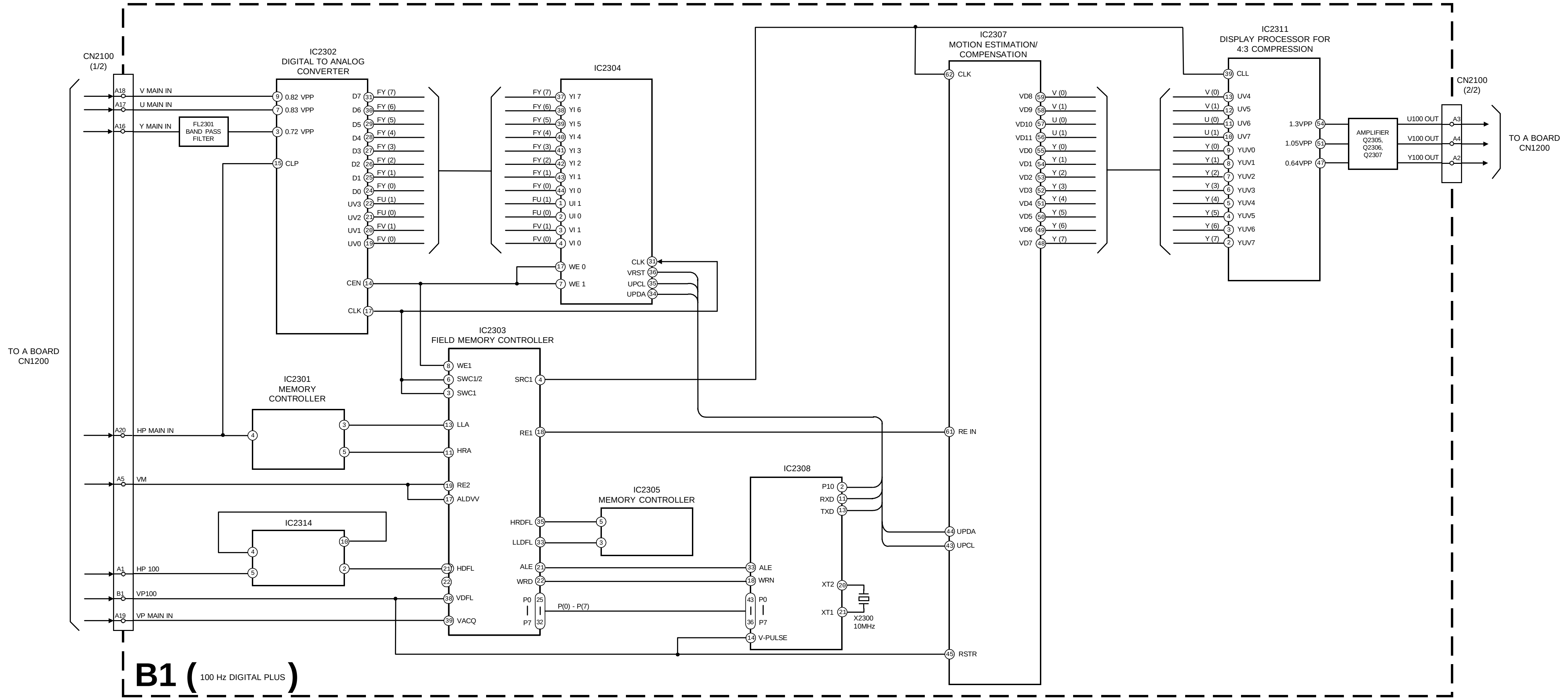
CN8900 AV1
CN8901 AV2
CN8902 A4V
CN8101 (1/2)
TO A BOARD CN1801
IC8801 MAIN AUDIO/VIDEO SWITCH
IC8500 DIGITAL COMB FILTER
IC8301 MAIN COLOR DECODER
IC8401 SUB COLOR DECODER
IC8802 SUB AUDIO/VIDEO SWITCH
IC8700 AUTOWIDE
CN8101 (2/2)
TO A BOARD CN1801
IC8200 SOUND PROCESSOR
BUFFER Q8200
BUFFER Q8201
IC8201 OUTPUT AMP
IC8151 I2C SWITCH
IC8150 FM DEMULATOR
IC8101 HP OUT
HP MUTE SWITCH Q8100, Q8101
J8901 VARIABLE OUT
X8200 18.432MHz
J
INTERFACE, AUDIO, CHROMA, G COMB FILTER



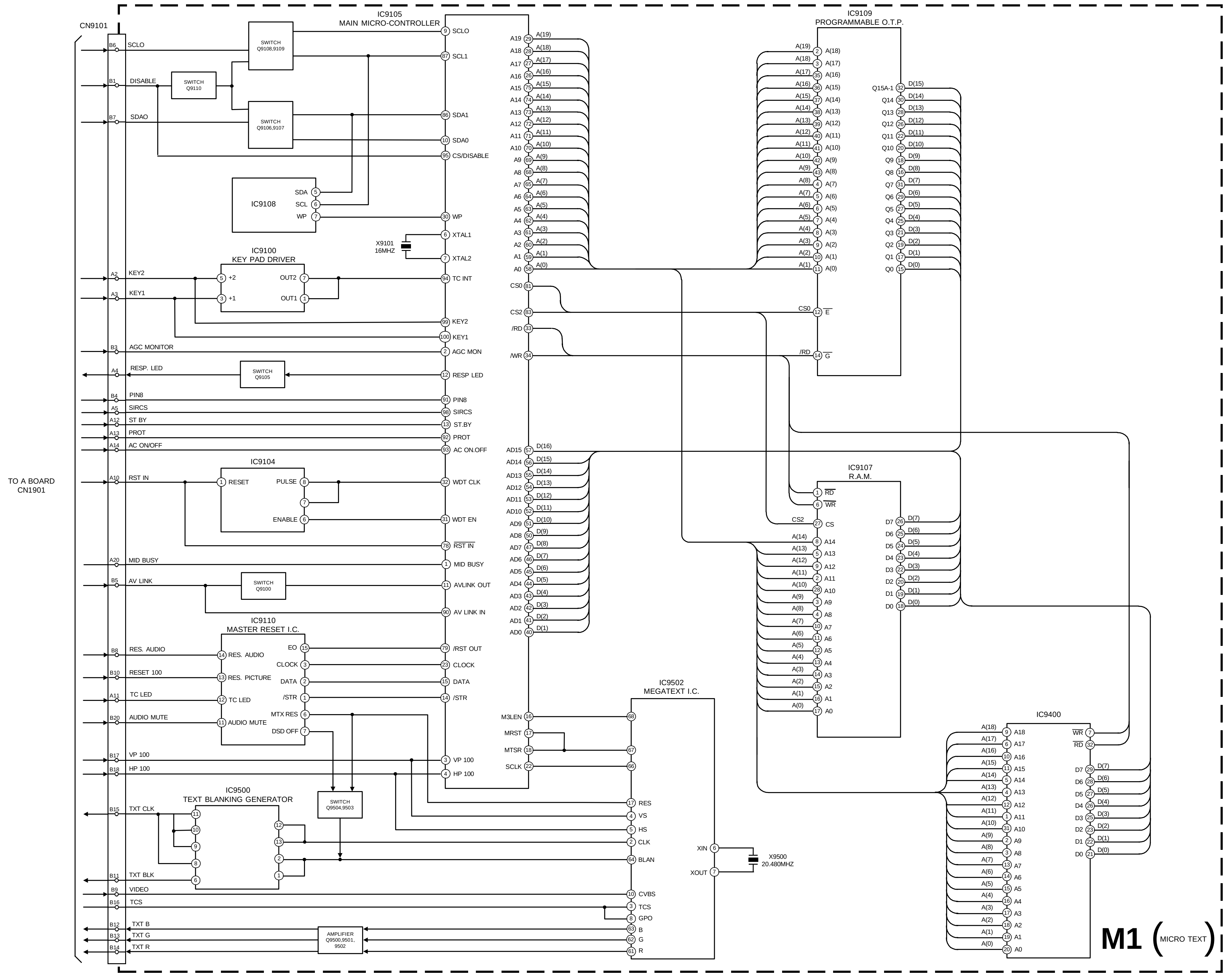
TU1326
TU1350 (SUB-TUNER)
IC1400 I/O EXPANDER
IC1126 AUDIO AMPLIFIER LEFT
IC1126 AUDIO AMPLIFIER RIGHT
IC1176 AUDIO AMPLIFIER CENTER AND SURROUND
IC1401
IC1601 +5VREG
IC1602 +5VREG
IC1604 +9VREG
IC1605 +3.5VREG
CN1801
CN1901
CN1601
CN1703
CN1401
CN1200
CN1602
CN1700
CN1702
TO D BOARD CN6101
TO H7 BOARD CN7904
TO J BOARD CN8101
TO E BOARD CN4101
TO D BOARD CN6102
TO M1 BOARD CN9101
TO B2 BOARD CN2100
TO H8 BOARD CN7150
TO H7 BOARD CN7902
A
SIGNAL AND AUDIO AMP

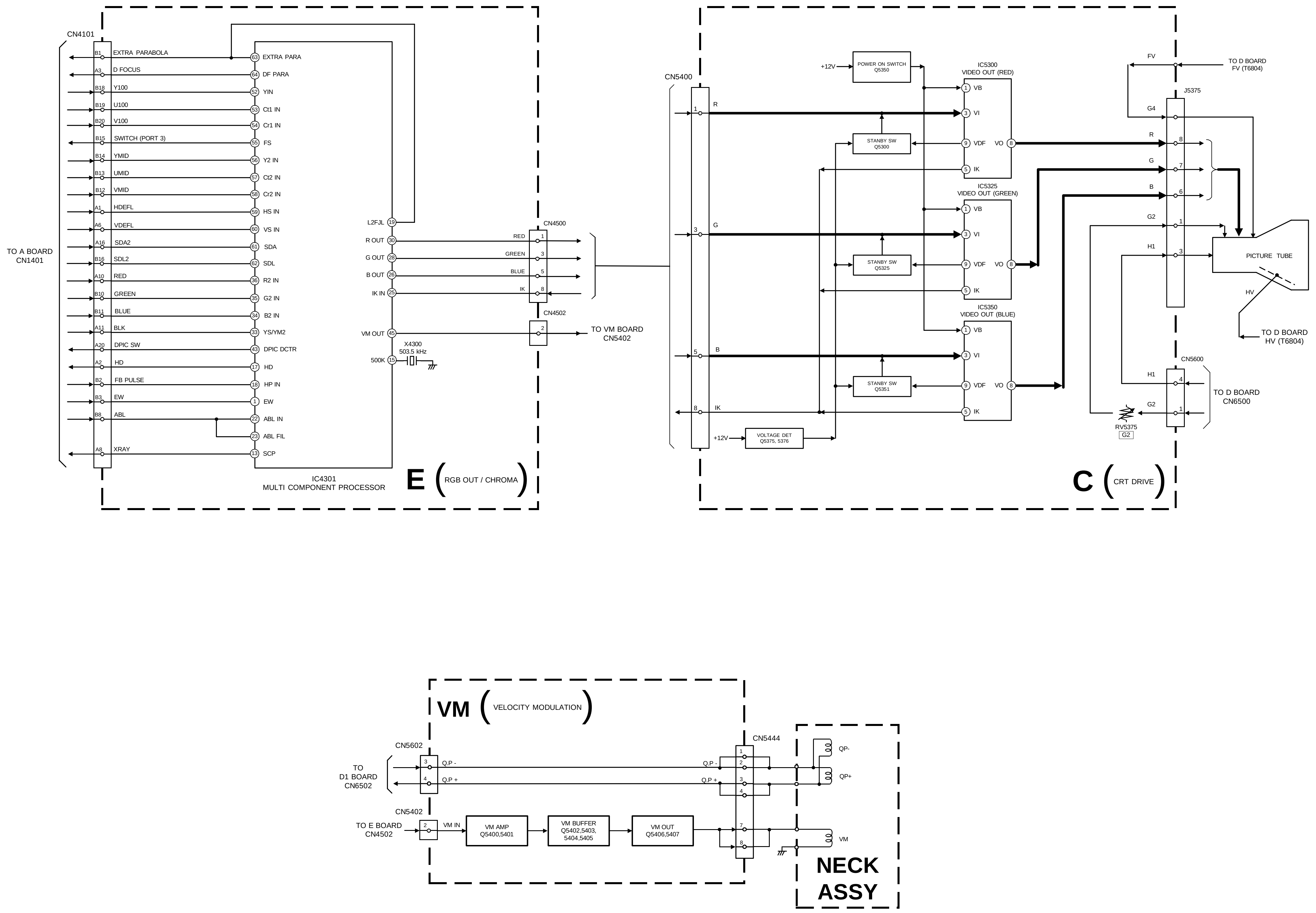
5-1. BLOCK DIAGRAMS (3)


CN6601 (1/2)
A24 ABL1
A5 E/W
B20 HP2
B13 HDIN
B3 SCL
A4 SDA2
A7 HP1
A9 EX PARA
B5 VFB
TO D BOARD CN6600
IC6102 ACTIVE HORIZONTAL SIZE ADJUSTMENT CONTROL
IC6100 HORIZONTAL DRIVE PULSE GENERATOR
IC6101 HORIZONTAL DRIVE PULSE GENERATOR
SWITCH Q6104 Q6106
SWITCH Q6104 Q6106
IC6250 MAIN HDY & VDY CONVERGANCE CONTROLLER
HD
SCL
SDA
VSTST
HSTAT
REFVOUT
HDYCON
VSAW
IC6251 O/P DRIVE STAGE FOR DYNAMIC CONVERGNCE
CY AMP Q6253, 6254
IC6103 HORIZONTAL LINEARITY & INNER PIN CONTROL
IC6350 QP SIGNAL SHAPING
V PROT Q6403, Q6404 Q6402, Q6401
+12V
IC6351 QP SIGNAL SHAPING
IC6352 QP OUTPUT DRIVE STAGE
QP OUT Q6358
IC6356 ROTATION POWER AMPLIFIER
+5V
IC6355 ROTATION PRE-AMPLIFIER
IC6354 `H' TRAP MULTIPLEXER/SIGNAL CONDITIONER & `H' LIN
IC6302 D/A FOR FOCUS, ROTATION, `H' TRAP
P4
P7
P5
P2
P6
CN6622
CY-
CY+
CN6601 (2/2)
HD2OUT A23
HD1OUT A22
IN PIN B25
L IN A25
VM MOD B16
DF DRIVE A14
V PROT B15
TO D BOARD CN6600
CN6502
QP-
TO VM BOARD CN6502
CN6633
TO ROTATION COIL
D1 (DEFLECTION)

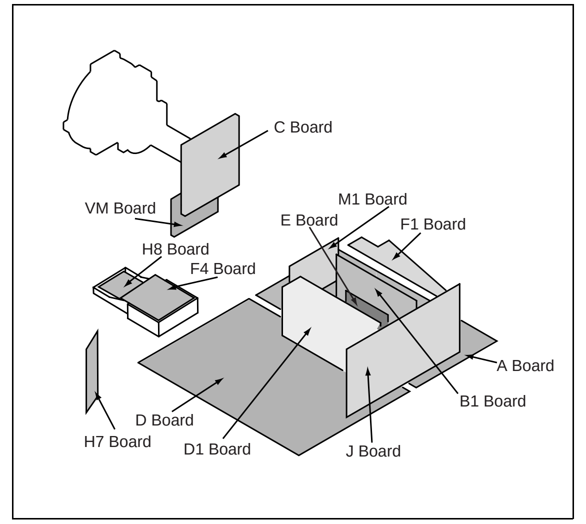

TO A BOARD CN1200
CN2100 (1/2)
A18 V MAIN IN
A17 U MAIN IN
A16 Y MAIN IN
A20 HP MAIN IN
A5 VM
A1 HP 100
B1 VP100
A19 VP MAIN IN
FL2301 BAND PASS FILTER
IC2302 DIGITAL TO ANALOG CONVERTER
0.82 VPP
0.83 VPP
0.72 VPP
CLP
D7 D6 D5 D4 D3 D2 D1 D0 UV3 UV2 UV1 UV0
FY (7) FY (6) FY (5) FY (4) FY (3) FY (2) FY (1) FY (0) FU (1) FU (0) FV (1) FV (0)
CEN
CLK
IC2304
YI 7 YI 6 YI 5 YI 4 YI 3 YI 2 YI 1 YI 0 UI 1 UI 0 VI 1 VI 0
WE 0
WE 1
CLK
VRST
UPCL
UPDA
IC2301 MEMORY CONTROLLER
IC2314
IC2303 FIELD MEMORY CONTROLLER
WE1
SWC1/2
SWC1
LLA
HRA
RE2
ALDVV
HDFL
VDFL
VACQ
SRC1
RE1
HRDFL
LLDFL
ALE
WRD
P0
P7
P(0) - P(7)
IC2305 MEMORY CONTROLLER
IC2308
P10
RXD
TXD
ALE
WRN
P0
P7
V-PULSE
XT2
XT1
X2300 10MHz
IC2307 MOTION ESTIMATION/ COMPENSATION
CLK
RE IN
UPDA
UPCL
RSTR
VD8 VD9 VD10 VD11 VD0 VD1 VD2 VD3 VD4 VD5 VD6 VD7
V (0) V (1) U (0) U (1) Y (0) Y (1) Y (2) Y (3) Y (4) Y (5) Y (6) Y (7)
IC2311 DISPLAY PROCESSOR FOR 4:3 COMPRESSION
CLL
UV4 UV5 UV6 UV7 YUV0 YUV1 YUV2 YUV3 YUV4 YUV5 YUV6 YUV7
1.3VPP
1.05VPP
0.64VPP
AMPLIFIER Q2305, Q2306, Q2307
U100 OUT A3
V100 OUT A4
Y100 OUT A2
CN2100 (2/2)
TO A BOARD CN1200
B1 (100 Hz DIGITAL PLUS)

5-1. BLOCK DIAGRAMS (4)


CN9101
IC9105
MAIN MICRO-CONTROLLER
IC9109
PROGRAMMABLE O.T.P
IC9108
X9101
16MHz
IC9100
KEY PAD DRIVER
TO A BOARD
CN1901
IC9104
IC9107
R.A.M.
IC9110
MASTER RESET I.C.
IC9502
MEGATEXT I.C.
IC9400
IC9500
TEXT BLANKING GENERATOR
X9500
20.480MHz
M1 (MICRO TEXT)


CN4101
TO A BOARD
CN1401
IC4301
MULTI COMPONENT PROCESSOR
CN4500
CN4502
TO VM BOARD
CN5402
X4300
503.5 kHz
E (RGB OUT / CHROMA)
CN5400
IC5300
VIDEO OUT (RED)
IC5325
VIDEO OUT (GREEN)
IC5350
VIDEO OUT (BLUE)
J5375
PICTURE TUBE
TO D BOARD
FV (T8804)
TO D BOARD
HV (T8804)
CN5600
TO D BOARD
CN6500
RV5375
G2
C (CRT DRIVE)
VM (VELOCITY MODULATION)
CN5602
TO
D1 BOARD
CN6502
CN5402
TO E BOARD
CN4502
VM AMP
Q5400,5401
VM BUFFER
Q5402,5403,
5404,5405
VM OUT
Q5406,5407
CN5444
NECK
ASSY

5-2. CIRCUIT BOARD LOCATION


C Board
VM Board
H8 Board
F4 Board
E Board
M1 Board
F1 Board
A Board
B1 Board
D Board
H7 Board
D1 Board
J Board

5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in µF unless otherwise noted.
- pF : µµF 50WV or less are not indicated except for electrolytic types.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5mm
Electrical power rating : 1/4W

- Chip resistors are 1/10W
- All resistors are in ohms.
  k = 1000 ohms, M = 1000,000 ohms
- : nonflammable resistor.
- : fusible resistor.
- △ : internal component.
- ▭ : panel designation or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All voltages are in Volts.
- Readings are taken with a 10Mohm digital mutimeter.
- Readings are taken with a color bar input signal.
- Voltage variations may be noted due to normal production tolerences.
- ▬ : B + bus.
- ▬ ▬ ▬ : B - bus.
- ⇨ : RF signal path.
- ⊥ : earth - ground.
- ⏚ : earth - chassis.

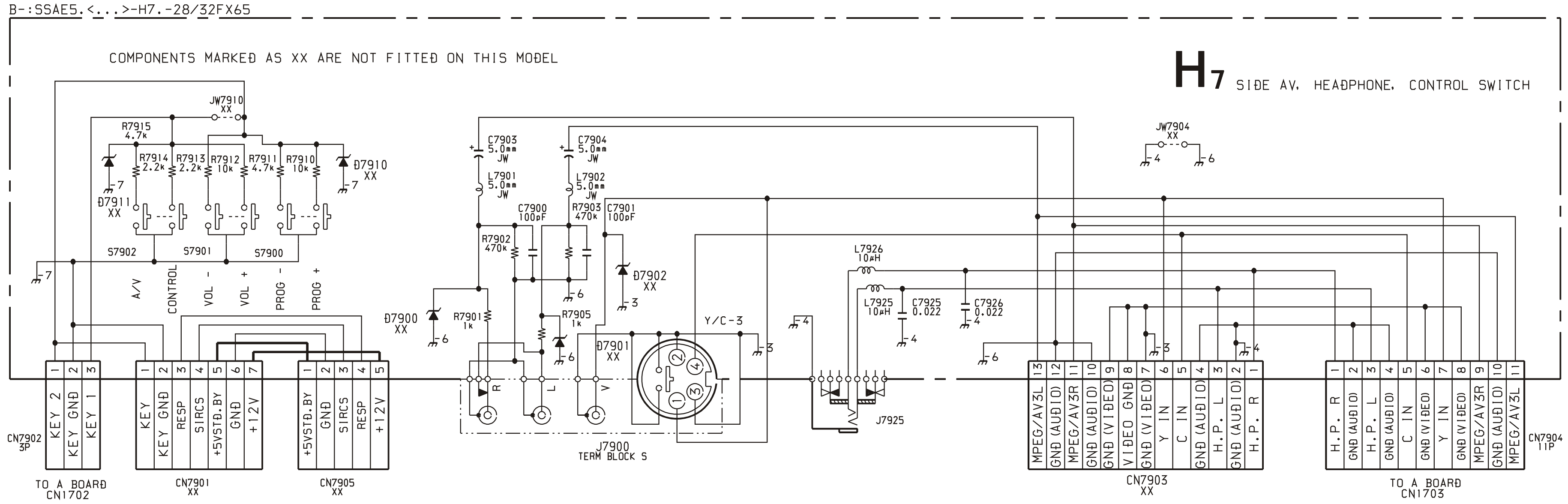
Reference Information

RESISTOR	**RN**	: METAL FILM
	RC	: SOLID
	FPRD	: NON FLAMMABLE CARBON
	FUSE	: NON FLAMMABLE FUSIBLE
	RS	: NON FLAMMABLE METAL OXIDE
	RB	: NON FLAMMABLE CEMENT
	RW	: NON FLAMMABLE WIREWOUND
	⊠	: ADJUSTMENT RESISTOR
COIL	**LF-8L**	: MICRO INDUCTOR
CAPACITOR	**TA**	: TANTALUM
	PS	: STYROL
	PP	: POLYPROPYLENE
	PT	: MYLAR
	MPS	: METALIZED POLYESTER
	MPP	: METALIZED POLYPROPYLENE
	ALB	: BIPOLAR
	ALT	: HIGH TEMPERATURE
	ALR	: HIGH RIPPLE

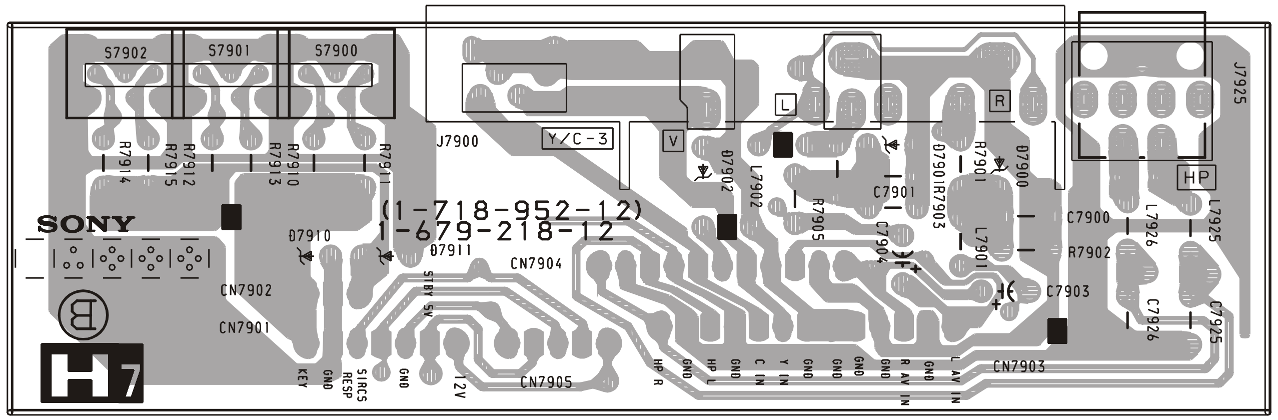
Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

Note : Les composants identifiés par une trame et par une marque ⚠ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié. specified.

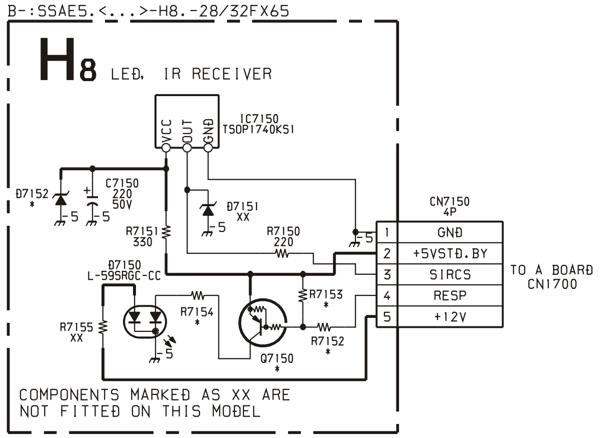
H7 [FRONT AV, S-VIDEO]


B-:SSAE5.<...>-H7.-28/32FX65
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL
H7 SIDE AV, HEADPHONE, CONTROL SWITCH
S7902
S7901
S7900
A/V
CONTROL
VOL -
VOL +
PROG -
PROG +
KEY 2
KEY GND
KEY 1
CN7902 3P
TO A BOARD CN1702
CN7901 XX
CN7905 XX
J7900 TERM BLOCK S
Y/C-3
J7925
CN7903 XX
TO A BOARD CN1703
CN7904 11P

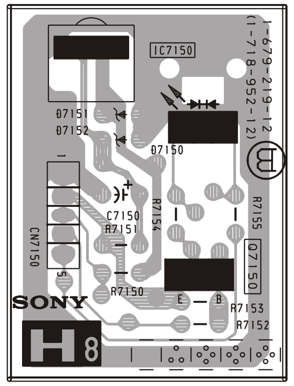
H7 [PRINTED WIRING BOARD]


S7902
S7901
S7900
J7900
Y/C-3
J7925
HP
SONY
(1-718-952-12)
1-679-218-12
CN7902
CN7901
CN7904
CN7905
CN7903
H7

H8 [IR RECEIVER FOR SIRCS AND LED]

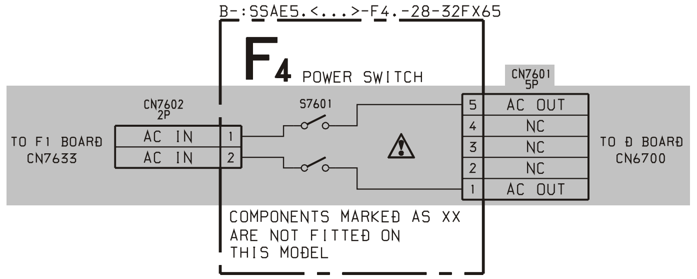

B-:SSAE5.<...>-H8.-28/32FX65
H8 LED, IR RECEIVER
IC7150 TSOP1740KS1
CN7150 4P
GND
+5VSTD.BY
SIRCS
RESP
+12V
TO A BOARD CN1700
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

H8 [PRINTED WIRING BOARD]

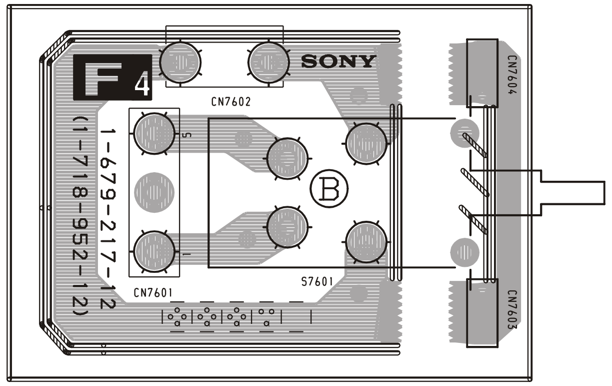

IC7150
(1-679-219-12)
1-718-952-12
CN7150
SONY
H8

Ref	28FX65B	28FX65E	28FX65U	32FX65B	32FX65E	32FX65K	32FX65U
D7152	MTZJ-T-77-5.6B	MTZJ-T-77-5.6B	MTZJ-T-77-5.6B	-	-	-	MTZJ-T-77-5.6B
Q7150	DTA144ESA-TP	DTA144ESA-TP	DTA144ESA-TP	-	-	-	DTA144ESA-TP
R7152	JW (5.0MM)	JW (5.0MM)	JW (5.0MM)	-	-	-	JW (5.0MM)
R7153	4.7K	4.7K	4.7K	-	-	-	4.7K
R7154	270	270	270	-	-	-	270

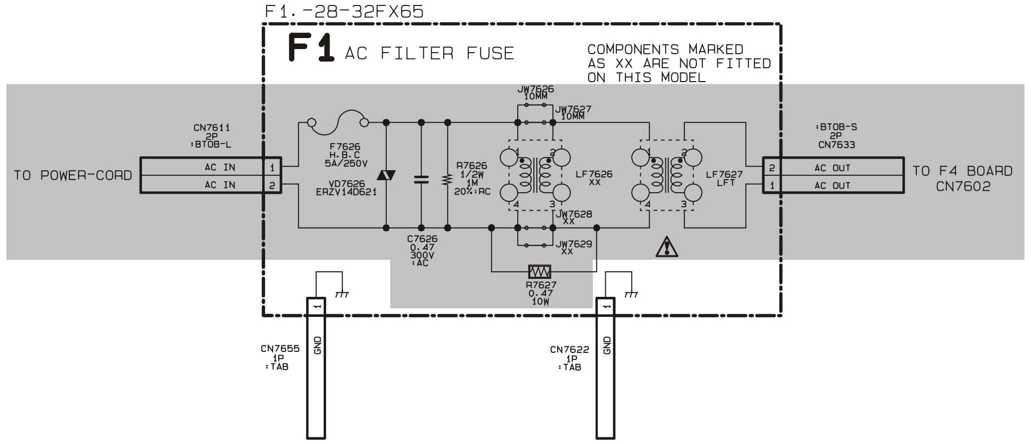
F4 [POWER SWITCH]


B-:SSAE5.<...>-F4.-28/32FX65
F4 POWER SWITCH
CN7602 2P
S7601
CN7601 5P
TO F1 BOARD CN7633
AC IN
AC IN
AC OUT
NC
NC
NC
AC OUT
TO D BOARD CN6700
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

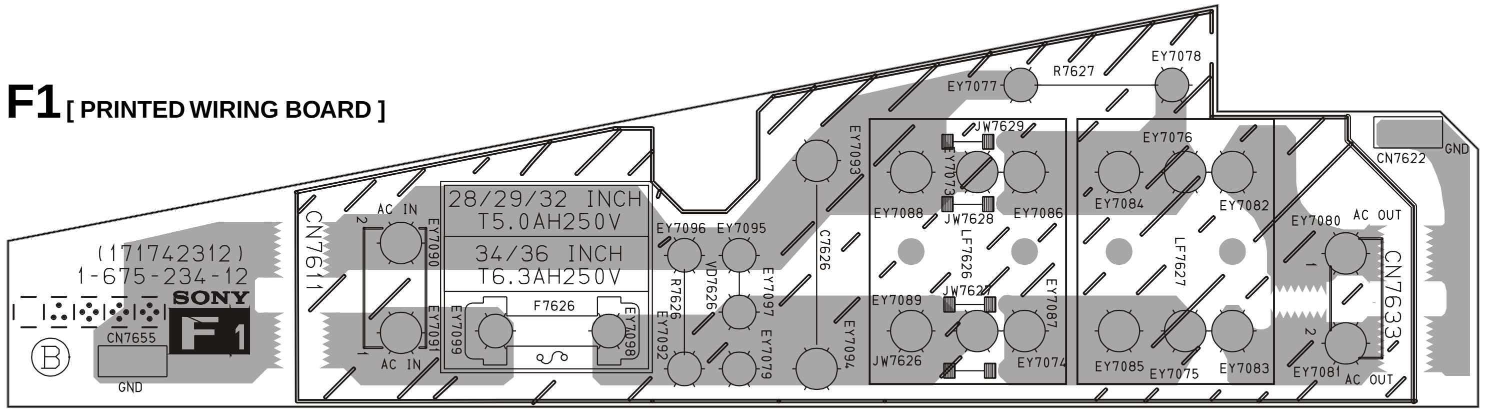
F4 [PRINTED WIRING BOARD]

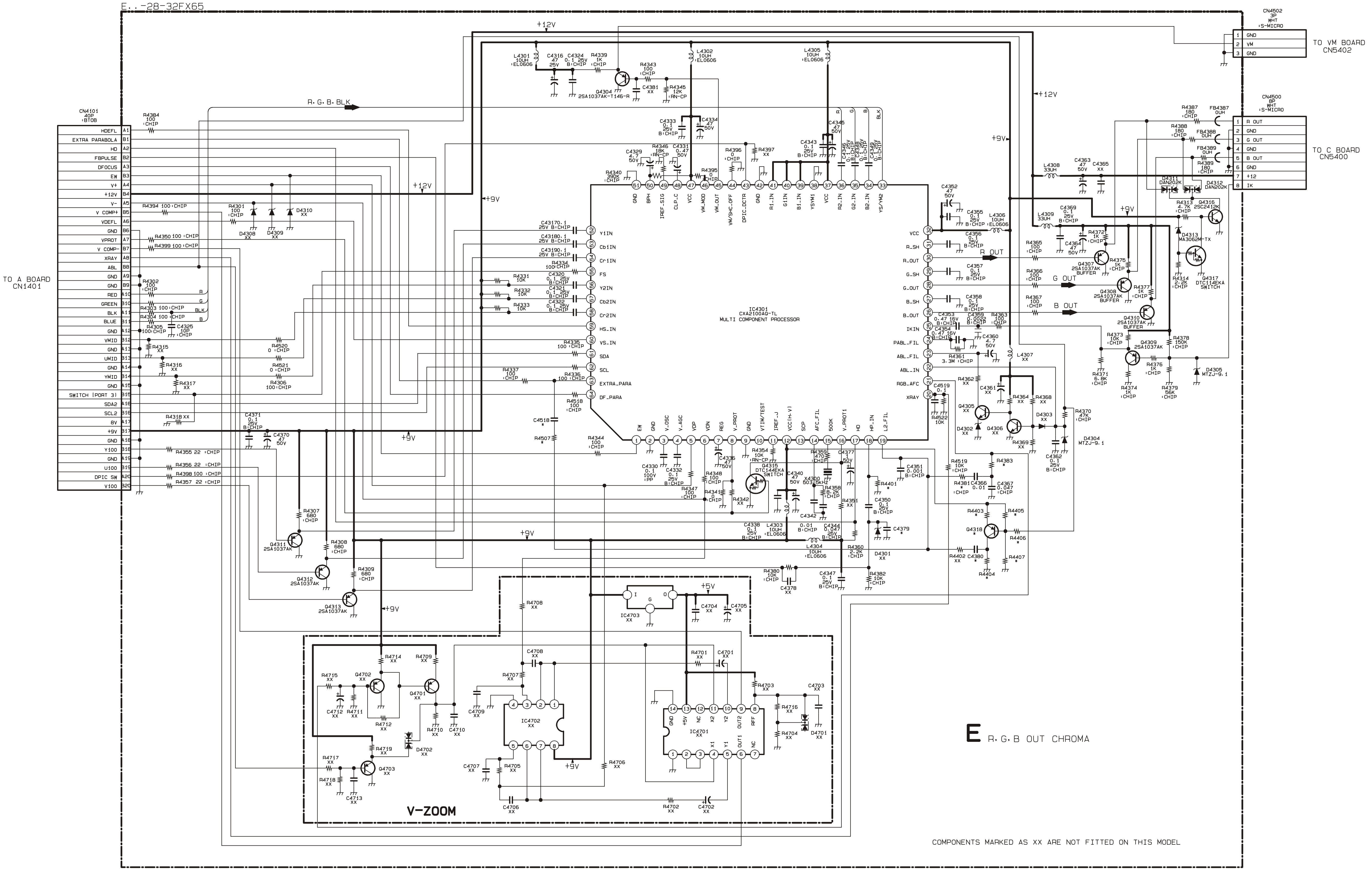

F4
SONY
CN7602
(1-718-952-12)
1-679-217-12
CN7601
S7601
CN7604
CN7605

F1 [AC FILTER FUSE]


F1.-28-32FX65
F1 AC FILTER FUSE
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL
TO POWER-CORD
CN7611 2P
AC IN
AC IN
F7626
LF7626
LF7627
CN7633
AC OUT
AC OUT
TO F4 BOARD CN7602
CN7655 1P TAB
CN7622 1P TAB
GND

F1 [PRINTED WIRING BOARD]

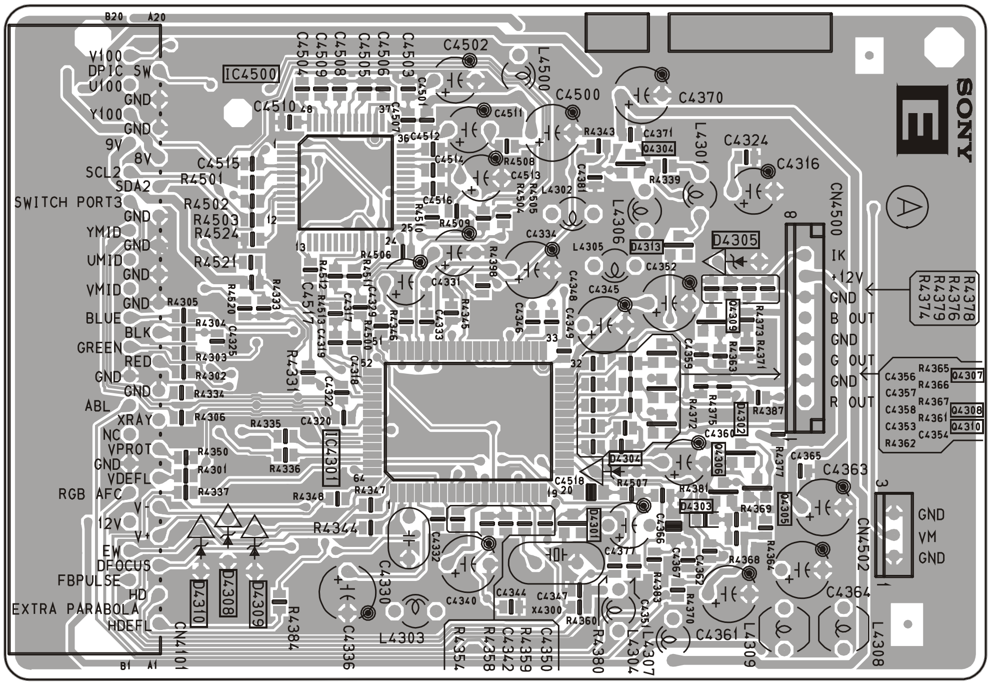

(171742312)
1-675-234-12
SONY
F1
28/29/32 INCH
T5.0AH250V
34/36 INCH
T6.3AH250V
CN7611
CN7655
CN7622
CN7633
AC IN
AC OUT
GND


E..-28-32FX65
TO A BOARD CN1401
CN4101 40P B708
HDEFL
EXTRA PARABOLA
HD
FBPULSE
DFOCUS
EW
V+
+12V
V-
V COMP+
VDEFL
GND
VPROT
V COMP-
XRAY
ABL
RED
GREEN
BLK
BLUE
VMID
UMID
YMID
SWITCH (PORT 3)
SDA2
SCL2
8V
+9V
Y100
U100
DPIC SW
V100
R.G.B.BLK
+12V
+9V
+5V
IC4301 CXA2100AQ-TL MULTI COMPONENT PROCESSOR
Y1IN
Cb1IN
Cr1IN
FS
Y2IN
Cb2IN
Cr2IN
HS_IN
VS_IN
SDA
SCL
EXTRA_PARA
DF_PARA
VCC
R_SH
R_OUT
G_SH
G_OUT
B_SH
B_OUT
IKIN
PABL_FIL
ABL_FIL
ABL_IN
RGB_AFC
XRAY
R OUT
G OUT
B OUT
TO VM BOARD CN5402
CN4502 3P WHT S-MICRO
GND
VM
TO C BOARD CN5400
CN4500 8P WHT S-MICRO
R OUT
G OUT
B OUT
+12
IK
Q4304 2SA1037AK-T146-R
Q4307 2SA1037AK BUFFER
Q4308 2SA1037AK BUFFER
Q4310 2SA1037AK BUFFER
Q4309 2SA1037AK
Q4316 2SC2412K
Q4317 DTC114EKA SWITCH
Q4315 DTC144EKA SWITCH
Q4311 2SA1037AK
Q4312 2SA1037AK
Q4313 2SA1037AK
D4313 MA3062M-TX
D4305 MTZJ-9.1
D4304 MTZJ-9.1
D4311 DAN202K
D4312 DAN202K
IC4703
IC4702
IC4701
V-ZOOM
E R.G.B OUT CHROMA

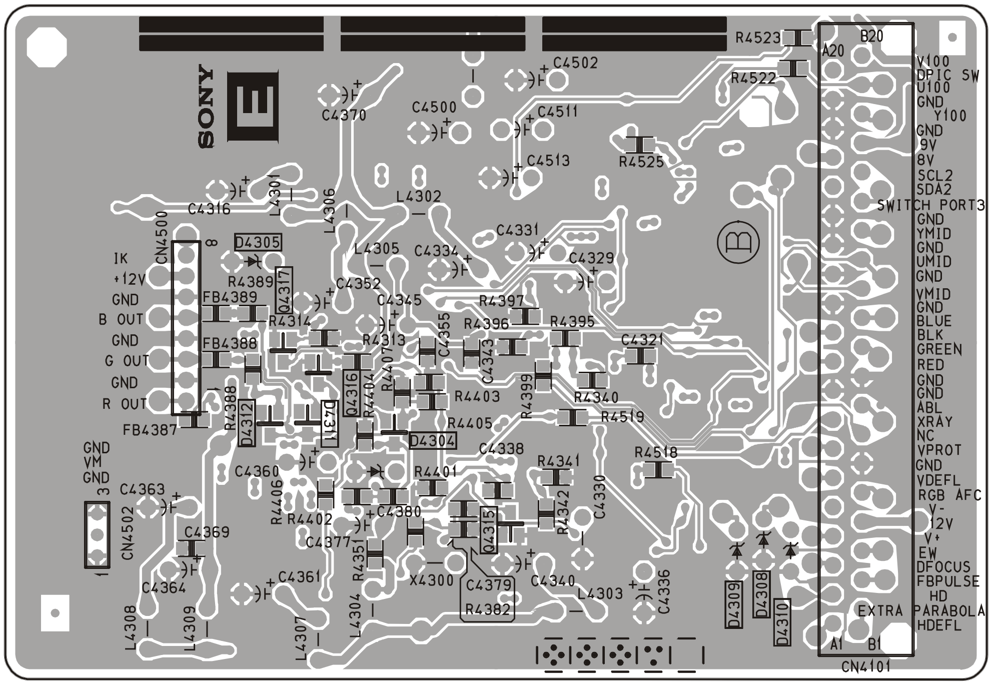
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

E [R, G, B OUT CHROMA]

E [PRINTED WIRING BOARD (A side)]

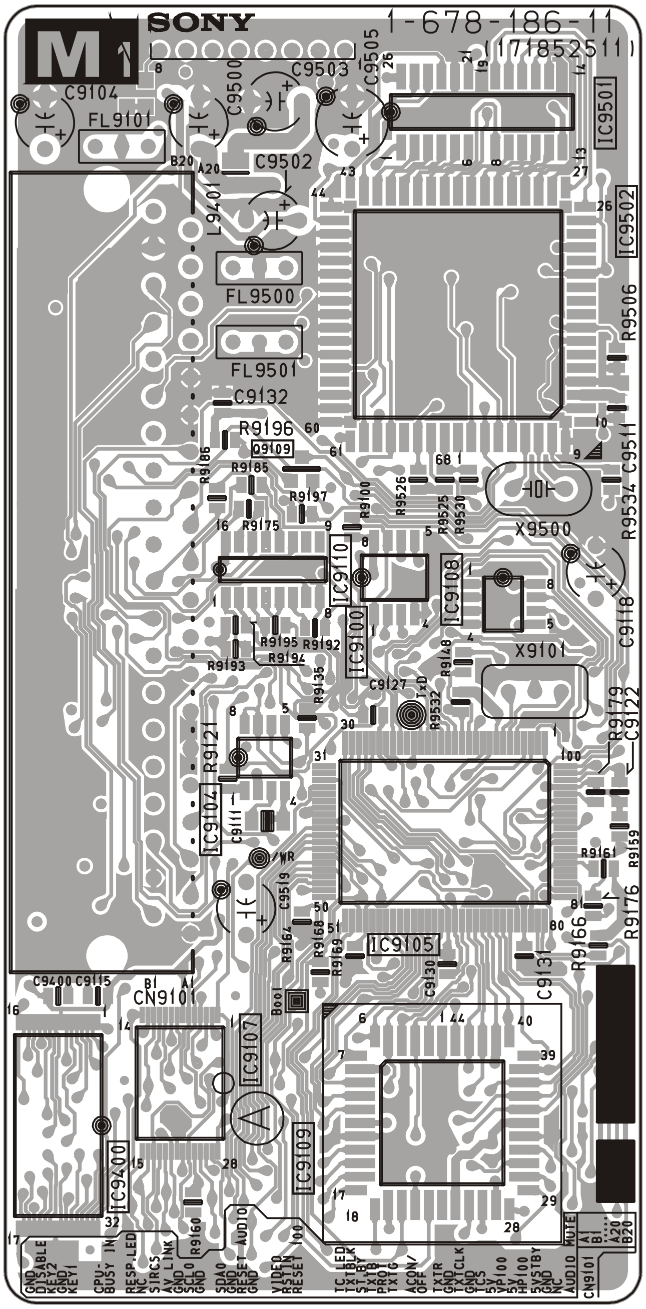

SONY
E
A
IC4500
IC4301
CN4101
CN4500
CN4502
V100
DPIC SW
U100
Y100
GND
9V
8V
SCL2
SDA2
SWITCH PORT3
YMID
UMID
VMID
BLUE
BLK
GREEN
RED
ABL
XRAY
NC
VPROT
VDEFL
RGB AFC
V-
12V
V+
EW
DFOCUS
FBPULSE
HD
EXTRA PARABOLA
HDEFL
IK
+12V
B OUT
G OUT
R OUT
VM
R4378
R4376
R4379
R4374
Q4307
Q4308
Q4310
D4305
D4308
D4309
D4310
C4502
C4500
C4370
C4324
C4316
C4363
C4364
C4361
C4330
C4336
L4500
L4301
L4303
L4306
L4307
L4308
L4309
X4300
R4344
R4384

E [PRINTED WIRING BOARD (B side)]

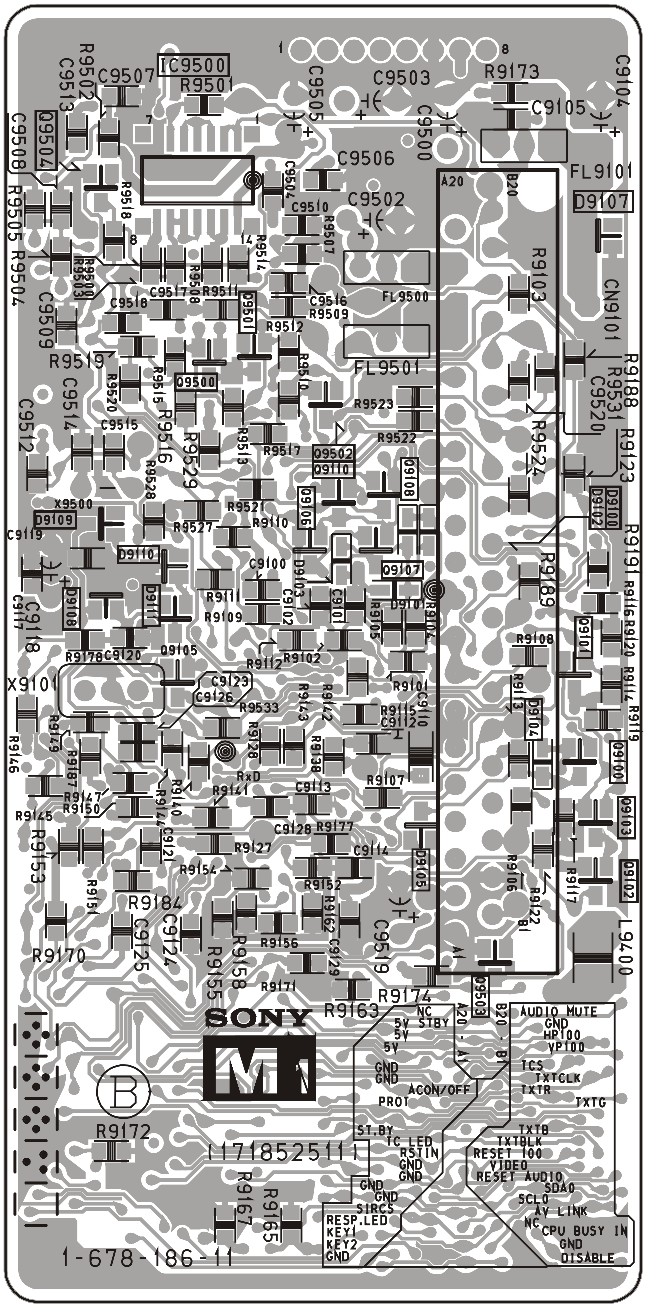

SONY
E
B
B20
A20
A1
B1
CN4101
CN4500
CN4502
R4523
R4522
R4525
C4502
C4500
C4511
C4513
C4370
C4316
L4301
L4306
L4302
L4305
C4334
C4331
C4329
D4305
R4389
Q4317
FB4389
FB4388
FB4387
C4352
C4345
R4397
R4396
R4395
R4314
R4313
C4355
C4343
C4321
Q4316
R4407
R4404
R4403
R4399
R4340
R4519
R4405
D4304
C4338
R4341
R4518
R4388
Q4312
Q4311
C4360
R4401
R4406
R4402
C4380
C4377
R4351
R4342
Q4315
C4330
C4361
X4300
C4379
R4382
C4340
L4303
C4336
C4363
C4369
C4364
L4308
L4309
L4307
L4304
D4309
D4308
D4310
IK
+12V
GND
B OUT
G OUT
R OUT
VM
V100
DPIC SW
U100
Y100
9V
8V
SCL2
SDA2
SWITCH PORT3
YMID
UMID
VMID
BLUE
BLK
GREEN
RED
ABL
XRAY
NC
VPROT
VDEFL
RGB AFC
V-
12V
V+
EW
DFOCUS
FBPULSE
HD
EXTRA PARABOLA
HDEFL

Ref	28FX65B	28FX65E	28FX65U	32FX65B	32FX65E	32FX65K	32FX65U
C4379	47PF	47PF	47PF	-	-	-	47PF
C4380	-	-	-	-	-	-	0.0047UF
C4518	-	-	-	1UF	1UF	1UF	-
Q4318	-	-	-	-	-	-	2SA1037AK-T146-R
R4381	-	-	-	1.5M	1.5M	1.5M	-
R4383	18K	18K	18K	47K	47K	47K	18K
R4401	220K	220K	220K	270K	270K	270K	220K
R4403	-	-	-	-	-	-	10K
R4404	10K	10K	10K	-	-	-	10K
R4405	-	-	-	-	-	-	39K
R4406	-	-	-	-	-	-	220K
R4407	-	-	-	-	-	-	56K
R4507	-	-	-	2.2M	2.2M	2.2M	-

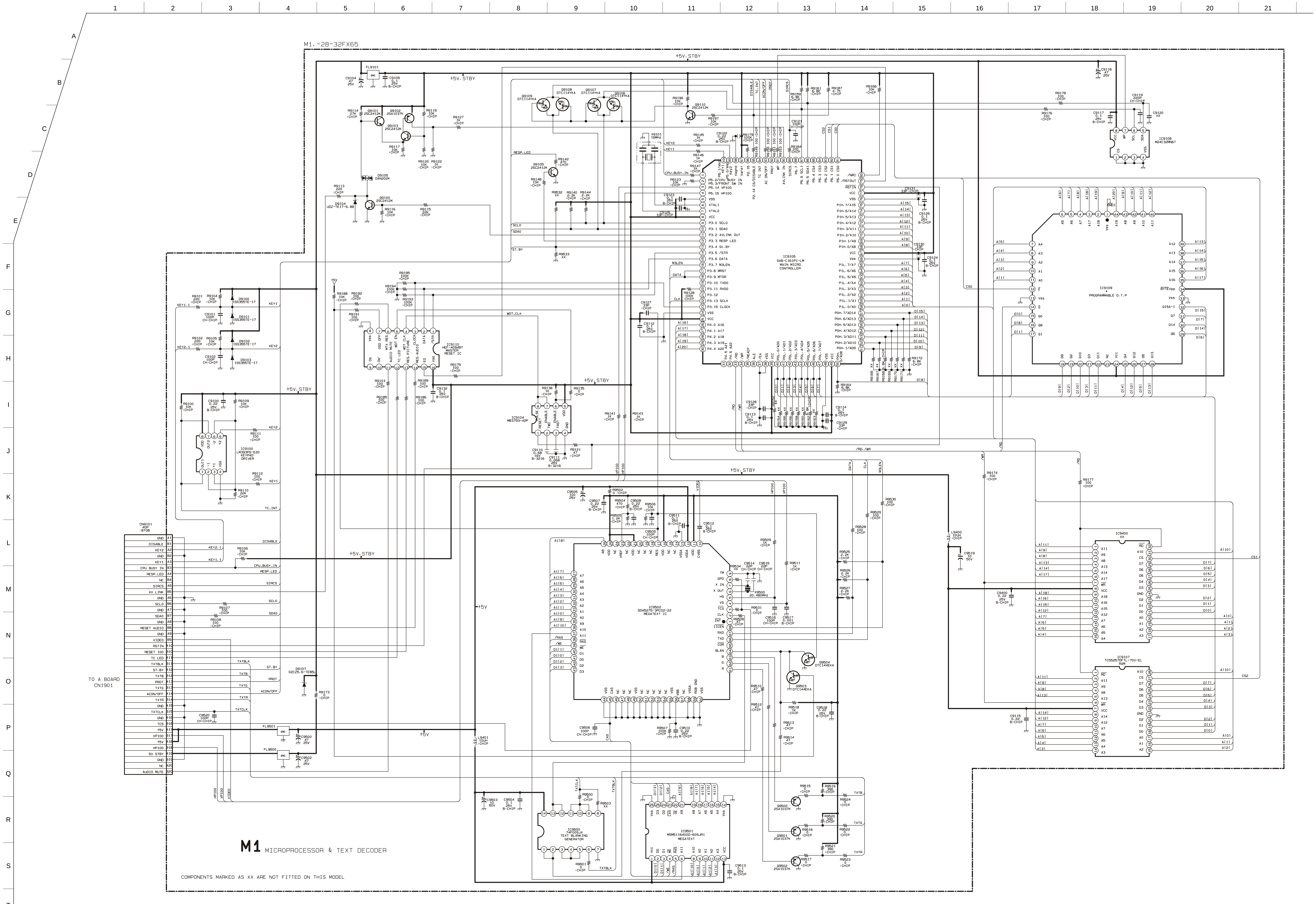
M1 [PRINTED WIRING BOARD (A side)]


SONY
M1
1-678-186-11
1718525111
IC9501
IC9502
IC9100
IC9110
IC9108
IC9104
IC9105
IC9107
IC9109
IC9400
FL9101
FL9500
FL9501
X9500
X9101
L9401
CN9101
CN9101
A
GND
DISABLE
KEY2
GND
KEY1
CPU-BUSY IN
RESP.LED
NC
SIRCS
AV LINK
GND
SCL0
GND
SDA0
GND
RESET AUDIO
GND
VIDEO
RSTIN
RESET 100
TC LED
ST.BY
TXTB
PROT
TXTG
ACON/OFF
TXTR
GND
TXTCLK
GND
TCS
5V
VP100
5V
HP100
5VSTBY
GND
NC
AUDIO MUTE

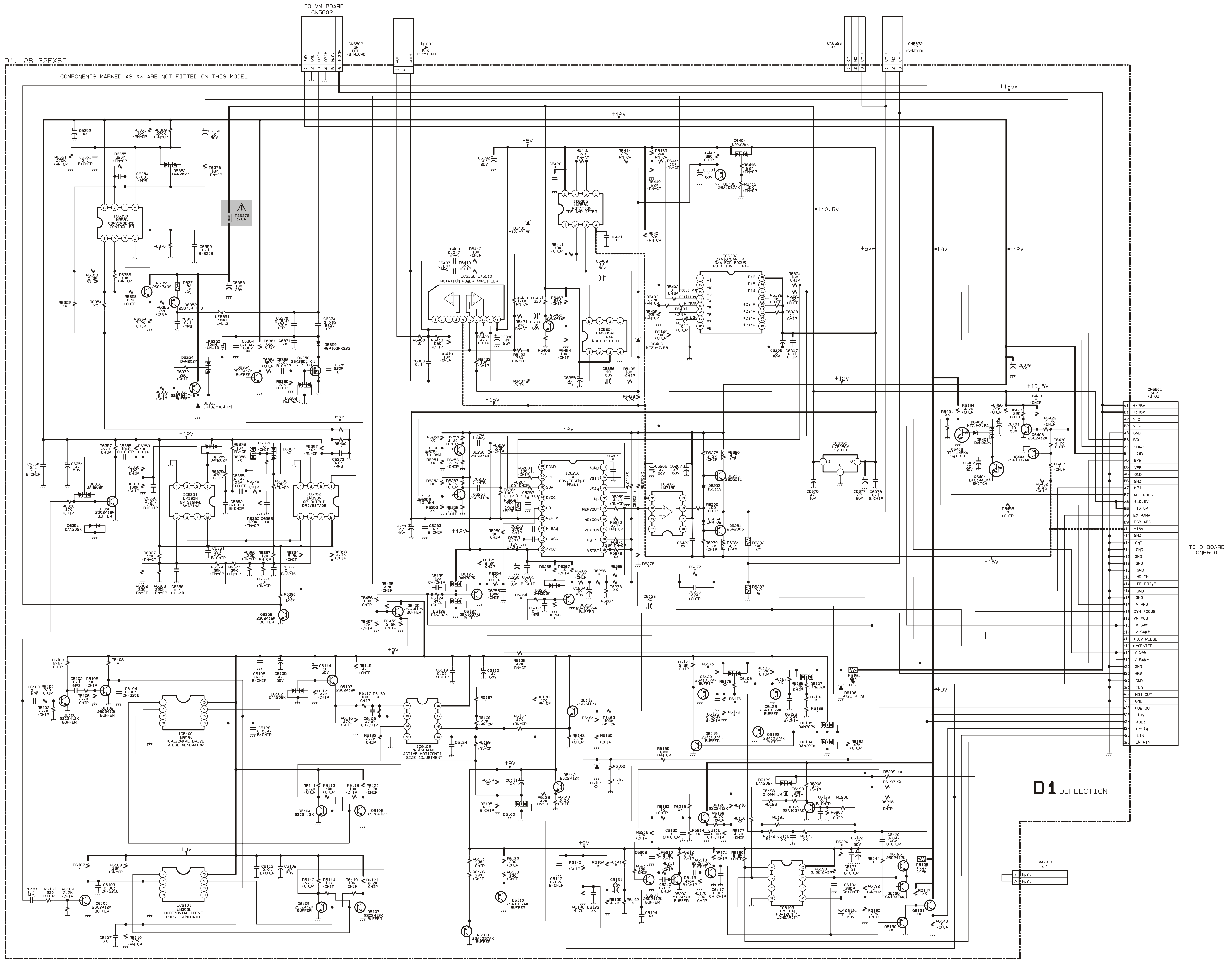
M1 [PRINTED WIRING BOARD (B side)]


SONY
M1
B
1-678-186-11
1718525111
IC9500
FL9101
FL9500
FL9501
X9101
CN9101
L9400
AUDIO MUTE
GND
HP100
VP100
TCS
TXTCLK
TXTR
TXTG
TXTB
TXTBLK
RESET 100
VIDEO
RESET AUDIO
SDA0
SCL0
AV LINK
NC
CPU BUSY IN
GND
DISABLE
NC
5V STBY
5V
5V
GND
GND
ACON/OFF
PROT
ST.BY
TC LED
RSTIN
GND
GND
GND
GND
SIRCS
RESP.LED
KEY1
KEY2
GND

Ref	28FX65B	28FX65E	28FX65U	32FX65B	32FX65E	32FX65K	32FX65U
IC9109	M27C800-100K1	M27C800-100K1	M27C800-100K1	M27C800-100K1-AE520	M27C800-100K1-AE520	M27C800-100K1-AE520	M27C800-100K1

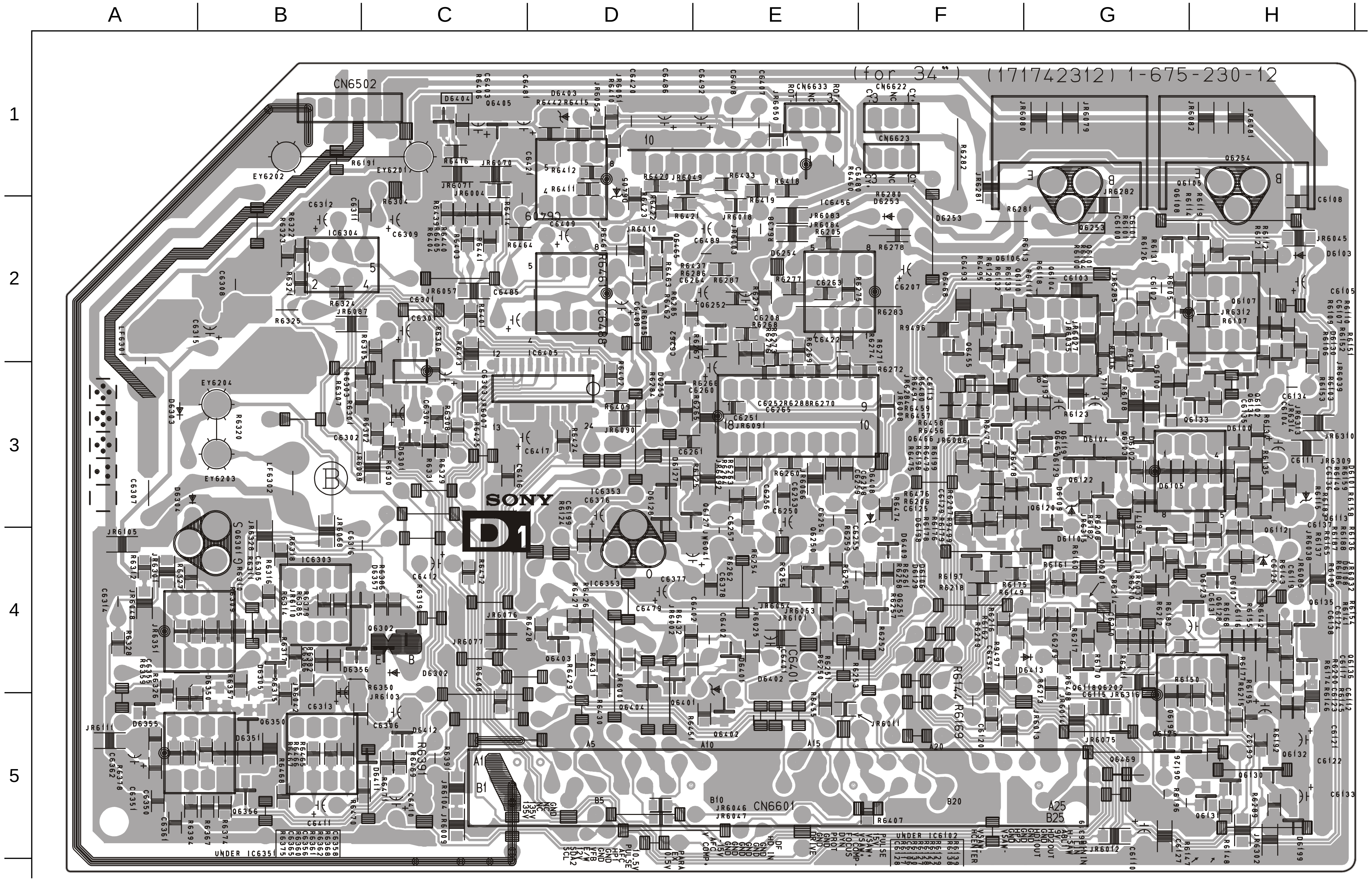

M1.-28-32FX65
+5V.STBY
IC9105
SAB-C161PI-LM
MAIN MICRO CONTROLLER
IC9108
M24C32MN6T
IC9109
PROGRAMMABLE O.T.P
IC9110
HEF4094BT
MASTER RESET IC
IC9104
MB3793-42P
IC9100
LM393PS-E20
KEYPAD DRIVER
IC9502
SDA5275-3PC02-22
MEGATEXT IC
IC9400
IC9107
TC55257DFTL-70V-EL
RAM
IC9500
74F00SJX
TEXT BLANKING GENERATOR
IC9501
MSM51164000-60SJR1
MEGATEXT
X9101
16MHz
X9500
20.480MHz
CN9101
40P
BTOB
TO A BOARD
CN1901
GND
DISABLE
KEY2
KEY1
CPU BUSY IN
RESP.LED
NC
SIRCS
AV LINK
SCLO
SDAO
RESET AUDIO
VIDEO
RSTIN
RESET 100
TC LED
TXTBLK
ST.BY
TXTB
PROT
TXTG
ACON/OFF
TXTR
TXTCLK
TCS
+5V
VP100
HP100
5V STBY
AUDIO MUTE
FL9101
FL9501
FL9500
+5V
M1 MICROPROCESSOR & TEXT DECODER
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

M1[MICROPROCESSOR AND TEXT DECODER]


D1.-28-32FX65
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL
TO VM BOARD
CN5602
CN6502
CN6633
CN6623
CN6622
+135V
+12V
+5V
+10.5V
+9V
-15V
IC6350 LM358N CONVERGENCE CONTROLLER
IC6351 LM393N SP SIGNAL SHAPING
IC6352 LM393N SP OUTPUT DRIVESTAGE
IC6356 LA6510 ROTATION POWER AMPLIFIER
IC6355 LM358N ROTATION PRE AMPLIFIER
IC6354 CA0005AD H TRAP MULTIPLEXER
IC6302 CXA1875AM-T4 D/A FOR FOCUS ROTATION H TRAP
IC6250 CONVERGENCE
IC6251 LM318P
IC6353 L78M05CV +5V REG
IC6100 LM393N HORIZONTAL DRIVE PULSE GENERATOR
IC6101 LM393N HORIZONTAL DRIVE PULSE GENERATOR
IC6102 NJM4560D ACTIVE HORIZONTAL SIZE ADJUSTMENT
IC6103 LM393N HORIZONTAL LINEARITY
CN6601
TO D BOARD
CN5600
CN6600
D1 DEFLECTION

Ref	28FX65B	28FX65E	28FX65U	32FX65B	32FX65E	32FX65K	32FX65U
C6130	220PF	220PF	220PF	-	-	-	-
C6134	10PF	10PF	10PF	-	-	-	-
C6209	470PF	470PF	470PF	100PF	100PF	100PF	100PF
C6251	0.033UF	0.033UF	0.033UF	SHORT 0	SHORT 0	SHORT 0	0.033UF
C6252	0.033UF	0.033UF	0.033UF	-	-	-	0.033UF
C6420	0.1UF	0.1UF	0.1UF	-	-	-	0.1UF
C6421	0.1UF	0.1UF	0.1UF	-	-	-	0.1UF
IC6250	CXA8070AP	CXA8070AP	CXA8070AP	CXA8070P	CXA8070P	CXA8070P	CXA8070AP
R6107	1.8K	1.8K	1.8K	2.2K	2.2K	2.2K	2.2K
R6108	1.8K	1.8K	1.8K	2.2K	2.2K	2.2K	2.2K
R6127	2.2K	2.2K	2.2K	3.3K	3.3K	3.3K	3.3K
R6130	470K	470K	470K	510K	510K	510K	510K
R6141	22K	22K	22K	15K	15K	15K	15K
R6142	6.2K	6.2K	6.2K	4.7K	4.7K	4.7K	4.7K
R6144	220K	220K	220K	120K	120K	120K	120K
R6145	1.5K	1.5K	1.5K	1.8K	1.8K	1.8K	1.8K
R6154	5.6K	5.6K	5.6K	1K	1K	1K	1K
R6158	2.2K	2.2K	2.2K	4.7K	4.7K	4.7K	4.7K
R6159	2.2K	2.2K	2.2K	SHORT 0	SHORT 0	SHORT 0	SHORT 0
R6161	6.8K	6.8K	6.8K	8.2K	8.2K	8.2K	8.2K
R6174	12K	12K	12K	22K	22K	22K	22K
R6175	4.7K	4.7K	4.7K	6.8K	6.8K	6.8K	6.8K
R6176	SHORT 0	SHORT 0	SHORT 0	8.2K	8.2K	8.2K	8.2K
R6179	4.7K	4.7K	4.7K	SHORT 0	SHORT 0	SHORT 0	SHORT 0
R6186	680	680	680	3.9K	3.9K	3.9K	3.9K
R6189	2.7K	2.7K	2.7K	SHORT 0	SHORT 0	SHORT 0	SHORT 0
R6192	22K	22K	22K	10K	10K	10K	10K
R6193	100PF	100PF	100PF	-	-	-	-
R6198	47K	47K	47K	22K	22K	22K	22K
R6200	68K	68K	68K	-	-	-	-
R6206	270K	270K	270K	220K	220K	220K	220K
R6207	470K	470K	470K	220K	220K	220K	220K
R6215	39K	39K	39K	47K	47K	47K	47K
R6265	150K	150K	150K	220K	220K	220K	220K
R6266	-	-	-	470K	470K	470K	470K
R6268	22K	22K	22K	68K	68K	68K	68K
R6276	12K	12K	12K	30K	30K	30K	30K
R6277	12K	12K	12K	30K	30K	30K	30K
R6284	470K	470K	470K	330K	330K	330K	330K
R6286	10K	10K	10K	8.2K	8.2K	8.2K	8.2K
R6287	10K	10K	10K	22K	22K	22K	22K
R6370	10K	10K	10K	12K	12K	12K	12K
R6399	15K	150K	150K	68K	68K	68K	68K
R6400	10K	10K	10K	12K	12K	12K	12K
R6428	180K	180K	180K	150K	150K	150K	150K
R6431	560K	560K	560K	470K	470K	470K	470K

D1[DEFLECTION]

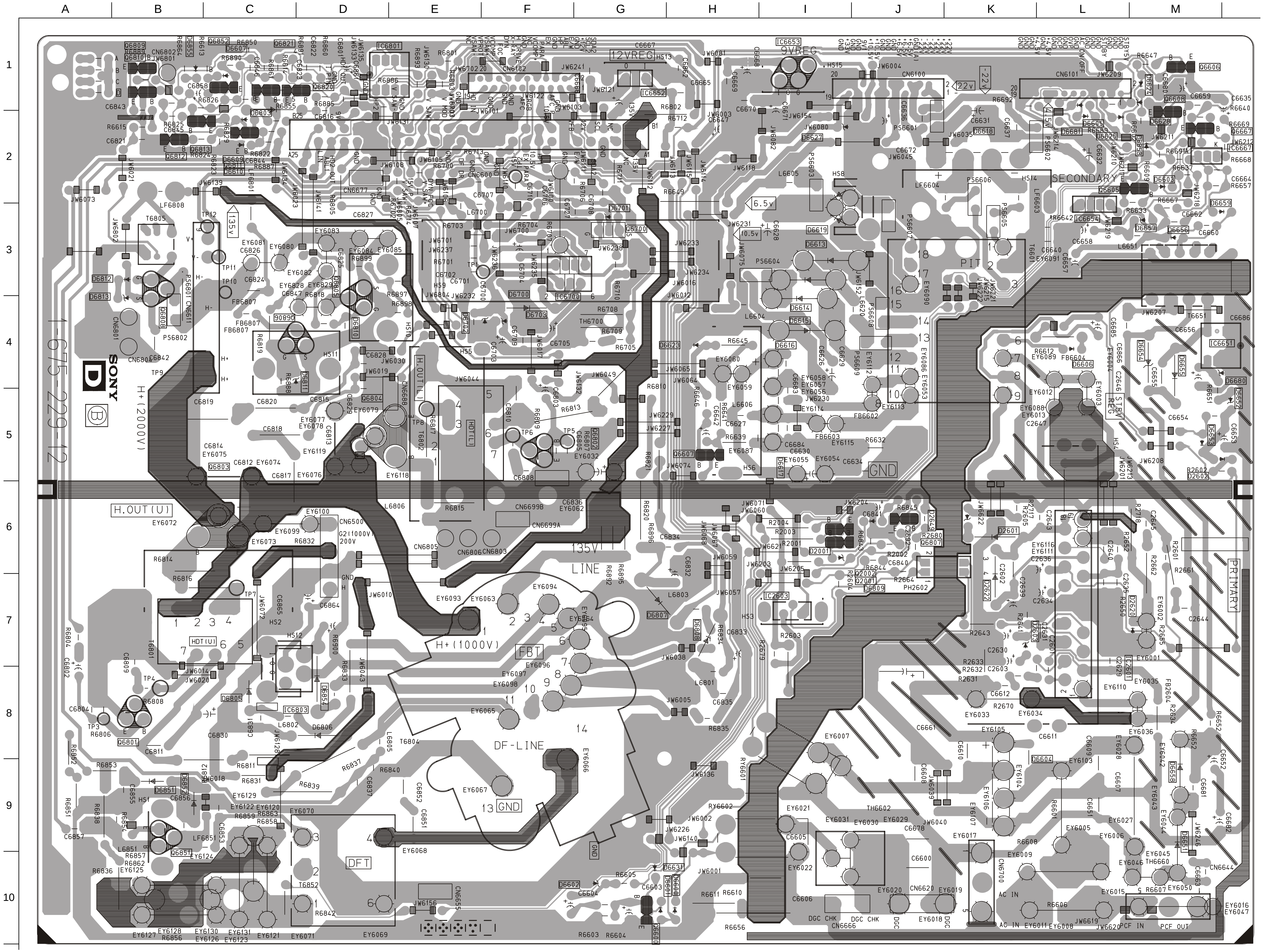

A
B
C
D
E
F
G
H
1
2
3
4
5
(for 34") (171742312) 1-675-230-12
CN6502
CN6622
CN6623
CN6633
SONY
D1
CN6601
UNDER IC6351
UNDER IC6102

IC	
IC6100	G - 2
IC6101	H - 2
IC6102	H - 3
IC6103	H - 5
IC6250	E - 3
IC6301	C - 3
IC6302	A - 4
IC6303	B - 4
IC6304	B - 2
IC6351	A - 5
IC6353	D - 4
IC6405	C - 2
IC6454	C - 2
IC6455	C - 1
IC6456	E - 1

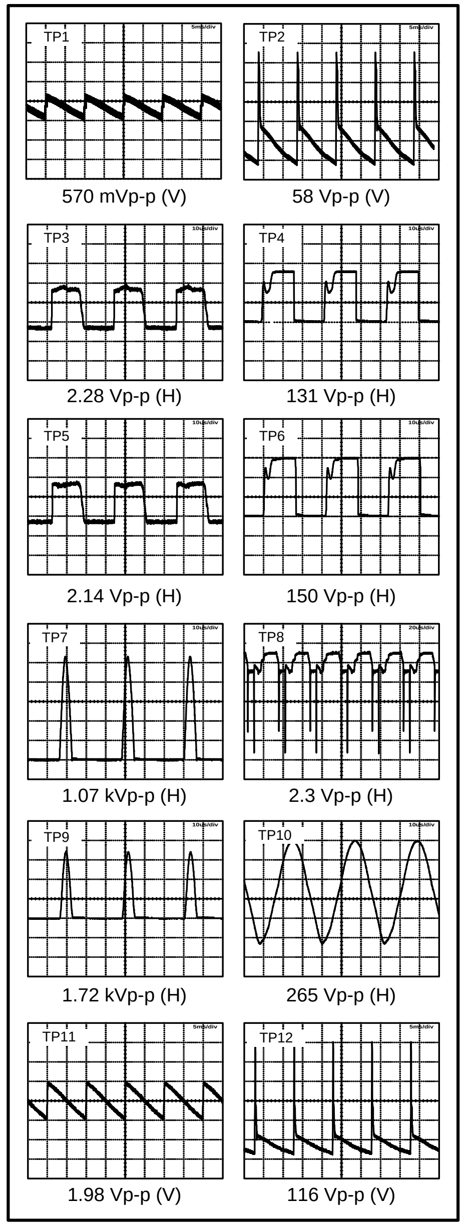
TRANSISTOR	
Q6100	G - 3
Q6101	H - 2
Q6102	H - 3
Q6103	G - 3
Q6104	F - 2
Q6105	G - 2
Q6106	F - 2
Q6107	H - 2
Q6108	G - 2
Q6110	F - 2
Q6112	H - 3
Q6113	H - 4
Q6118	G - 5
Q6119	F - 4
Q6120	F - 4
Q6122	F - 4
Q6123	H - 3
Q6125	H - 5
Q6126	H - 5
Q6127	D - 3
Q6128	H - 4
Q6129	F - 3
Q6130	H - 5
Q6131	H - 5
Q6201	G - 4
Q6202	G - 4
Q6250	E - 4
Q6251	F - 4
Q6252	D - 2
Q6253	H - 2
Q6254	G - 2
Q6301	A - 3
Q6302	C - 4
Q6350	B - 4
Q6356	B - 5
Q6401	D - 5
Q6402	E - 5
Q6403	D - 4
Q6404	D - 4
Q6405	C - 1
Q6455	F - 3
Q6465	D - 2
Q6466	F - 3
Q6467	G - 3

DIODE	
D6102	G - 3
D6104	G - 4
D6105	G - 3
D6107	H - 4
D6108	H - 4
D6127	D - 3
D6128	D - 3
D6129	F - 3
D6198	F - 3
D6301	C - 3
D6302	C - 4
D6303	A - 3
D6304	A - 3
D6305	B - 4
D6253	F - 2
D6254	E - 2
D6255	D - 3
D6350	A - 4
D6351	B - 5
D6355	A - 4
D6401	D - 4
D6402	E - 5
D6403	D - 1
D6404	C - 1
D6405	D - 1
D6408	E - 3
D6409	F - 4

D1 [PRINTED WIRING BOARD]


A
B
C
D
E
F
G
H
I
J
K
L
M
1
2
3
4
5
6
7
8
9
10
SONY
D
1-675-229-12
B
H+(2000V)
H.OUT(U)
H.OUT(L)
H+(1000V)
FBT
DF-LINE
DFT
HDT(L)
HDT(U)
12VREG
9VREG
135V
135V LINE
6.5V
10.5V
22V
-22V
PIT
SECONDARY
PRIMARY
GND
AC IN
PCF IN
PCF OUT
DGC CHK

D board Waveforms



IC Voltage Table

Ref No	Pin No	Voltage (V)
IC6600	1	134.7
	2	2.5
	3	9.1
	4	0
IC6700	1	1.4
	3	-12.2
	5	-0.8
	6	15.0
	7	1.4
IC6801	1	0
	2	0
	3	0
	5	2.2
	6	6.7
	7	0.1

Semiconductor Voltage Table

Ref	(e)	(b)	(c)	Ref	(e)	(b)	(c)
Q6676	1.8	2.5	5	Q6603	0	0	11.8
Q6677	1.8	2.1	5	Q6605	0	0.7	0
Q6678	1.8	1.6	5	Q6608	0	0	3.5
Q6807	0	6.4	0	Q6681	0	11.4	0
Q6801	0	0.3	61	Q6607	0.3	0.5	5
Q6802	0	-0.4	73.7	Q6851	0	-1	84.6
Q6803	0	135.2	0	**Ref**	**(s)**	**(g)**	**(d)**
Q6804	0	0	135.6	Q6805	0	2	22
Q6602	9.1	11.8	0	Q6806	0	1.4	135.7

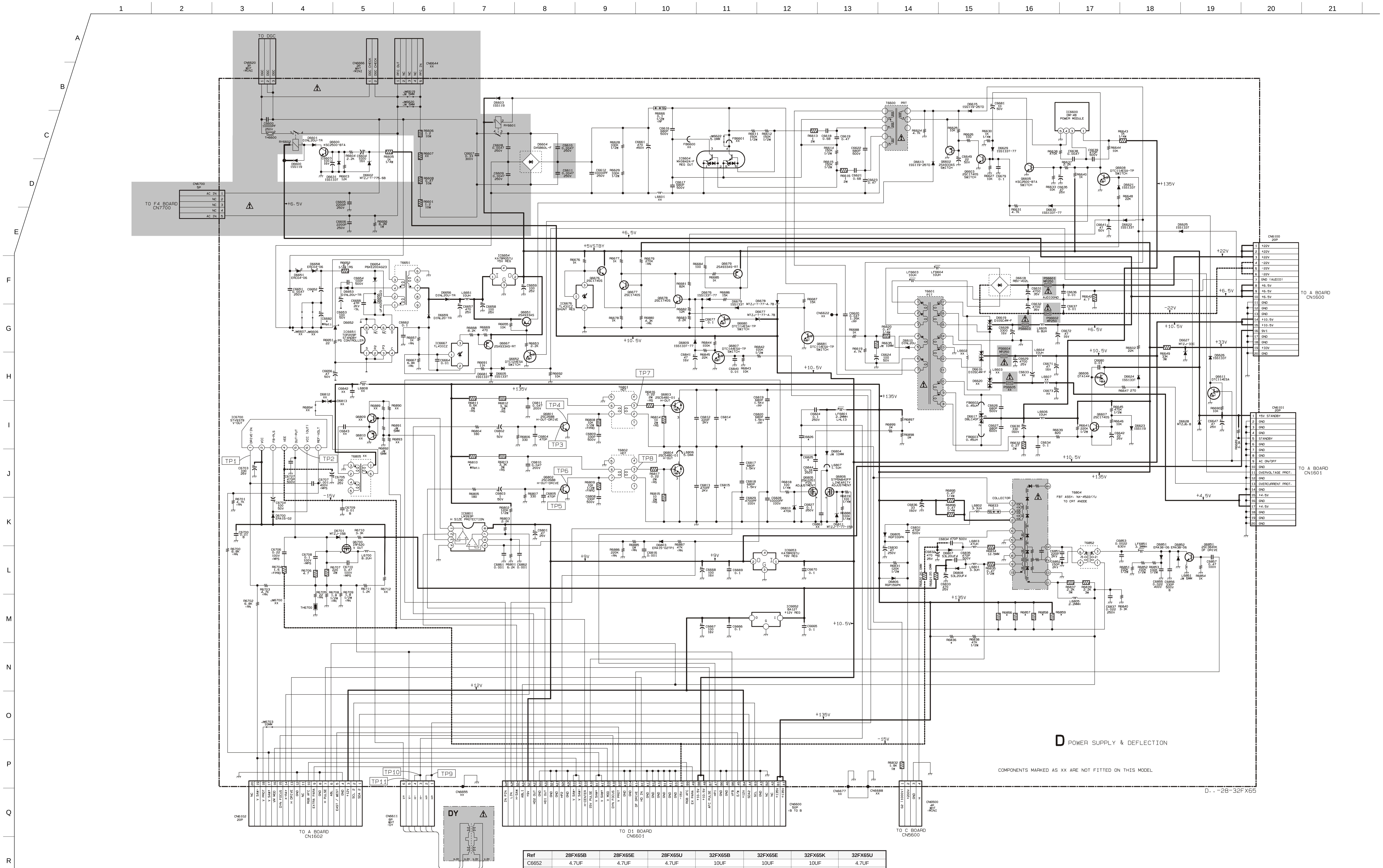
D [PRINTED WIRING BOARD]

IC	
IC2601	L - 7
IC2603	I - 7
IC6651	M - 4
IC6652	G - 1
IC6653	I - 1
IC6654	L - 3
IC6667	M - 2
IC6700	F - 3
IC6801	D - 1
IC6803	C - 8

TRANSISTORS	
Q2001	I - 6
Q2002	I - 6
Q6600	G - 10
Q6605	L - 2
Q6606	M - 1
Q6607	H - 5
Q6608	M - 1
Q6667	M - 2
Q6700	G - 3
Q6801	B - 8
Q6802	F - 5
Q6803	C - 6
Q6804	D - 5
Q6805	D - 4
Q6806	C - 4
Q6807	J - 6
Q6809	B - 1
Q6810	B - 1
Q6811	C - 2
Q6812	B - 2
Q6813	B - 2
Q6820	C - 1
Q6821	C - 1
Q6851	B - 9

DIODE	
D2001	I - 6
D2601	K - 6
D2602	M - 5
D2603	K - 7
D2620	L - 7
D2622	K - 6
D2649	J - 6
D6600	G - 10
D6601	G - 10
D6602	F - 10
D6603	M - 2
D6604	K - 8
D6605	L - 2
D6606	L - 4
D6607	C - 1
D6609	C - 2
D6610	C - 2
D6613	I - 3
D6614	I - 3
D6615	I - 4
D6616	I - 4
D6617	I - 5
D6618	K - 2
D6619	I - 3
D6623	H - 4
D6624	M - 1
D6625	L - 2
D6627	I - 2
D6628	M - 1
D6631	G - 10
D6651	M - 9
D6652	M - 5
D6653	M - 5
D6654	M - 4
D6655	M - 4
D6656	M - 3
D6658	M - 8
D6659	M - 2
D6681	L - 2
D6700	F - 3
D6701	G - 2
D6803	C - 1
D6805	C - 8
D6806	C - 8
D6807	G - 7
D6808	H - 7
D6809	J - 7
D6811	C - 4
D6812	A - 3
D6813	A - 3
D6851	B - 9
D6852	B - 9
D6853	L - 2
D6854	D - 8

NOTE:
Portions of the circuit marked as shown are high voltage areas. Use care to prevent electric shock during inspection or repair.


TO DGC
CN6620
CN6666
CN6644
TO F4 BOARD
CN7700
CN6700
AC IN
+6.5V
RY6601
RY6602
D6604
D4SB60L-F
IC6600
DM-48
POWER MODULE
T6600
PRT
IC6604
MX6842A-F
REG OUT
+135V
+5VSTBY
IC6651
TOP200Y
STANDBY
PS CONTROLLER
IC6654
KA78R05TU
+5V REG
IC6676
TL431CZ
SHUNT REG
T6601
PIT
CN6100
20P
TO A BOARD
CN1600
+22V
-22V
+33V
+10.5V
IC6700
STV9379
V-OUT
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
T6801
HDT
T6802
HDT
Q6803
2SC5480-01
H-OUT
Q6804
2SC5480-01
H-OUT
IC6801
LM393F
H SIZE PROTECTION
IC6653
KA78R09TU
+9V REG
IC6652
BA12T
+12V REG
+9V
+12V
-15V
T6804
FBT ASSY-
TO CRT ANODE
COLLECTOR
CN6101
20P
TO A BOARD
CN1601
+4.5V
CN6102
20P
TO A BOARD
CN1602
CN6661
DY
TO D1 BOARD
CN6601
CN6600
50P
:B TO B
TO C BOARD
CN5600
CN6500

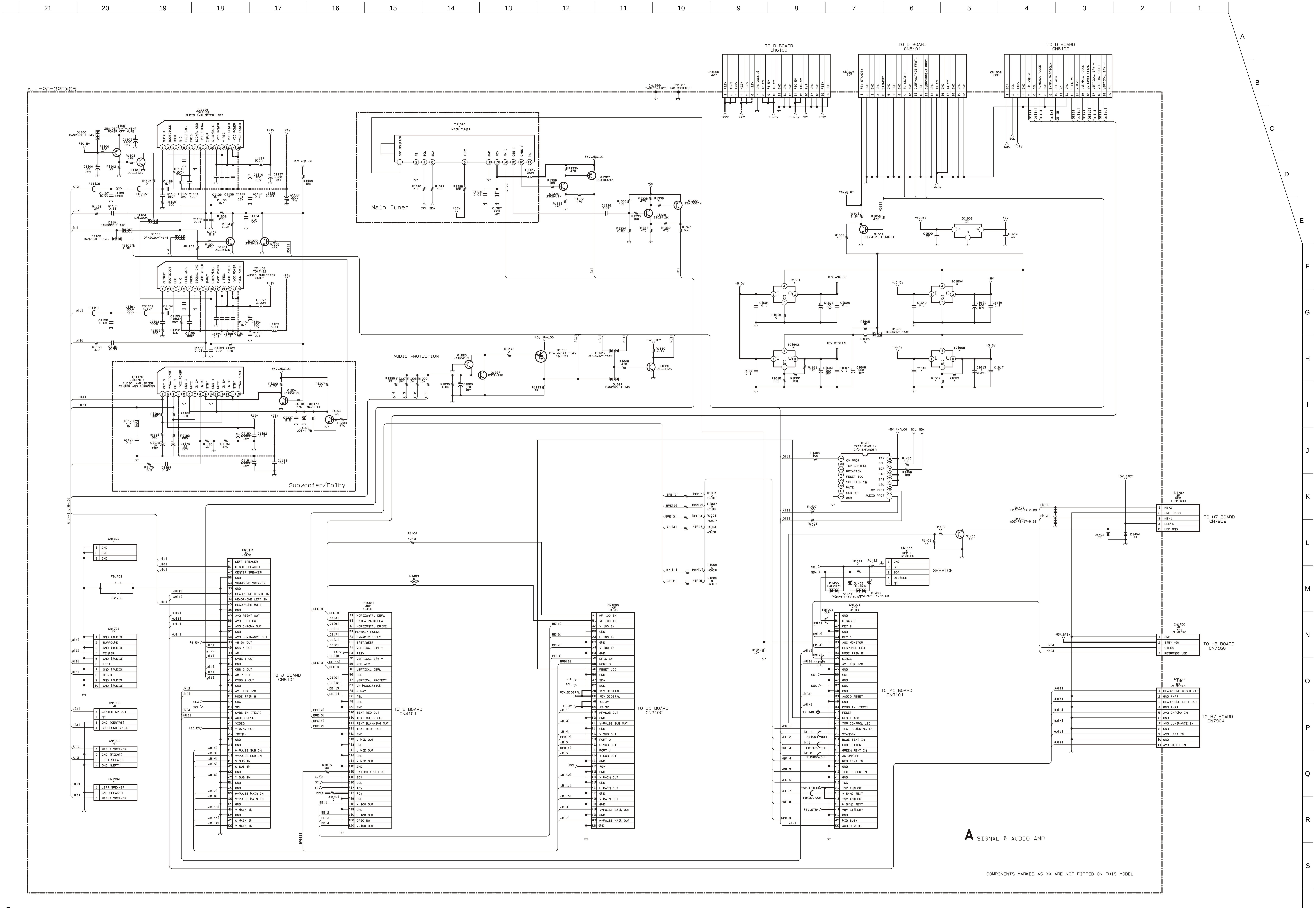
D POWER SUPPLY & DEFLECTION

COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

D.-28-32FX65

Ref	28FX65B	28FX65E	28FX65U	32FX65B	32FX65E	32FX65K	32FX65U
C6652	4.7UF	4.7UF	4.7UF	10UF	10UF	10UF	4.7UF
C6682	JW 5.0MM	JW 5.0MM	JW 5.0MM	10UF	10UF	10UF	JW 5.0MM
C6814	7500PF	7500PF	7500PF	6800PF	6800PF	6800PF	6800PF
C6815	6800PF	6800PF	6800PF	6200PF	6200PF	6200PF	6200PF
C6825	0.22UF	0.22UF	0.22UF	0.18UF	0.18UF	0.18UF	0.18UF
C6826	0.68UF	0.68UF	0.68UF	0.56UF	0.56UF	0.56UF	0.56UF
D6652	MTZJ-T-77-12	MTZJ-T-77-12	MTZJ-T-77-12	MTZJ-T-77-12A	MTZJ-T-77-12A	MTZJ-T-77-12A	MTZJ-T-77-12
R6810	3.3K	3.3K	3.3K	3.9K	3.9K	3.9K	3.9K
R6836	18K	18K	18K	15K	15K	15K	15K
R6856	18K	18K	18K	5.6K	5.6K	5.6K	5.6K
R6857	18K	18K	18K	5.6K	5.6K	5.6K	5.6K
R6858	18K	18K	18K	5.6K	5.6K	5.6K	5.6K
R6859	18K	18K	18K	5.6K	5.6K	5.6K	5.6K
R6897	470K	470K	470K	680K	680K	680K	680K

D [POWER SUPPLY & DEFLECTION]


A..-28-32FX65
TO D BOARD CN6100
TO D BOARD CN6101
TO D BOARD CN6102
IC1126 TDA7482 AUDIO AMPLIFIER LEFT
IC1151 TDA7482 AUDIO AMPLIFIER RIGHT
IC1176 LM1876TF AUDIO AMPLIFIER CENTER AND SURROUND
Subwoofer/Dolby
TU1326 MAIN TUNER
Main Tuner
AUDIO PROTECTION
Q1229 DTA144EKA-T146 SWITCH
IC1400 CXA1875AM-T4 I/O EXPANDER
IC1601
IC1602
IC1603
IC1604
IC1605
TO H7 BOARD CN7902
SERVICE
TO H8 BOARD CN7150
TO H7 BOARD CN7904
TO J BOARD CN8101
TO E BOARD CN4101
TO B1 BOARD CN2100
TO M1 BOARD CN9101
A SIGNAL & AUDIO AMP
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

A [SIGNAL AND AUDIO AMPLIFIER]

IC Voltage Table

IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC1126	1	0
	2	-11
	3	10
	6	-19
	9	0
	10	4.1
	12	-11
IC1151	1	0
	2	-11
	3	10
	6	-18
	9	0
	10	4.1
	12	-11
IC1400	1	0
	3	4.6
	5	4.6
	6	4.0
	9	0
	10	0
	14	4.5
	15	4.5
IC1176	1	0
	3	3
	6	3
	7	0
	8	0
	9	0
	11	3
	12	0
	13	0
	14	0

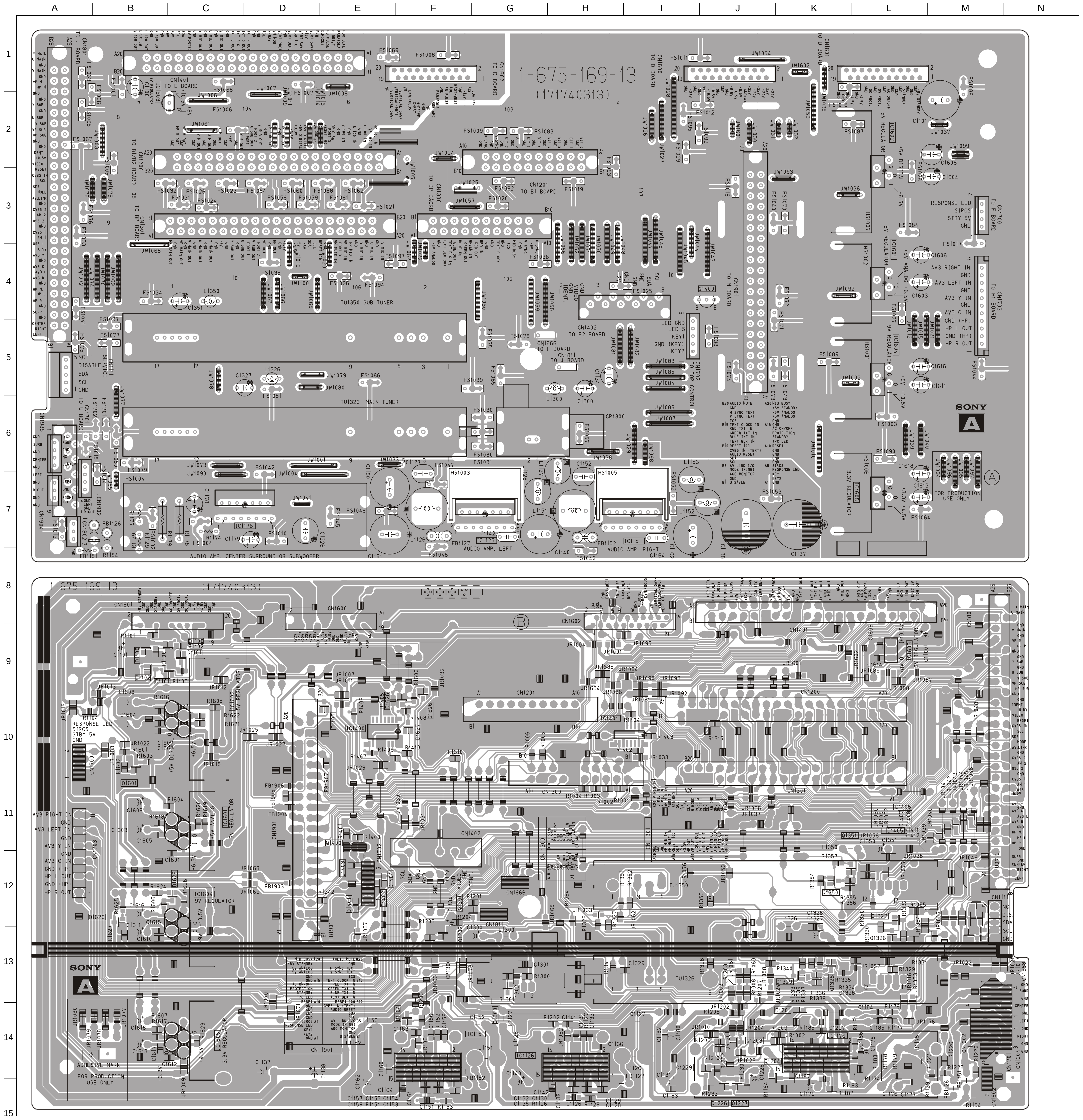
Semiconductor Location Table

IC		Q1403	L - 9
IC1126	G - 7	Q1404	L - 9
IC1151	I - 7	Q1405	M - 8
IC1176	K - 14	Q1406	M - 9
IC1400	E - 10	Q1601	B - 11
IC1601	L - 4	Q1602	C - 9
IC1604	L - 5	Q1626	F - 9
IC1605	L - 7	**DIODE**	
IC1630	I - 2	D1101	B - 9
IC1631	L - 2	D1101	B - 9
TRANSISTOR		D1102	B - 9
Q1100	B - 9	D1103	D - 10
Q1101	C - 9	D1104	E - 14
Q1201	F - 12	D1201	K - 13
Q1202	F - 12	D1401	E - 12
Q1204	F - 12	D1402	E - 12
Q1226	J - 15	D1405	L - 11
Q1227	J - 15	D1406	L - 11
Q1229	I - 14	D1407	L - 11
Q1300	G - 13	D1408	L - 11
Q1326	L - 12	D1601	C - 9
Q1327	L - 12	D1602	C - 9
Q1328	K - 13	D1626	B - 12
Q1329	K - 13	D1627	F - 10
Q1401	L - 9	D1630	H - 1
Q1402	L - 9	D1631	L - 3

Semiconductor Voltage Table

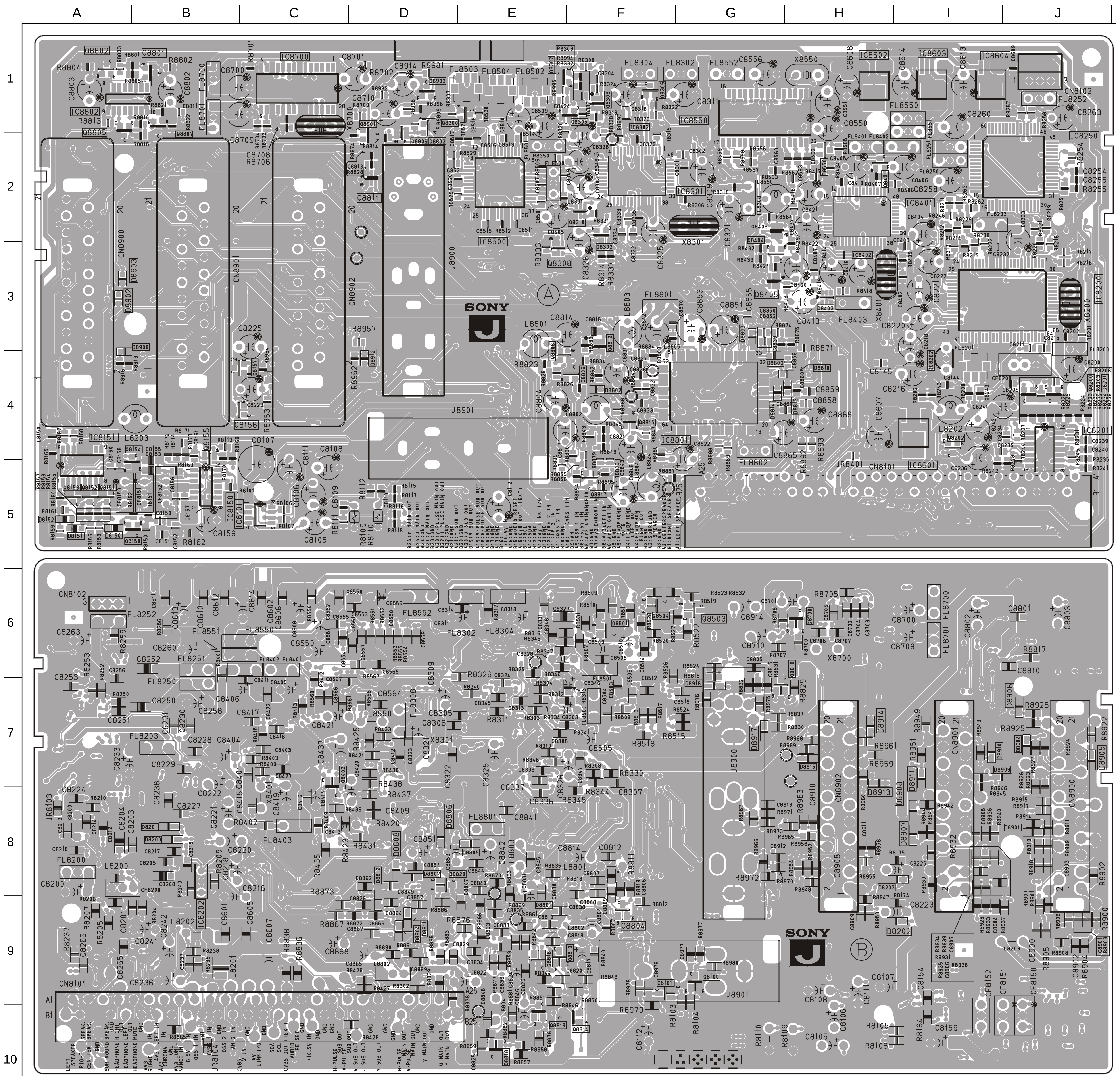
Ref	(e)	(b)	(c)	Ref	(e)	(b)	(c)
Q1100	10.5	10.6	0	Q1229	5	4.9	0
Q1101	0	0	2.2	Q1326	1.2	1.8	4.4
Q1201	0	0.6	0	Q1327	5	4.4	1.7
Q1202	0	0.1	2.1	Q1328	2.6	3.2	8.3
Q1300	0	4.6	0	Q1329	5	8.3	4.5
Q1226	0	0	4.9	Q1601	0	0	5
Q1227	0	0	4.9	Q1602	3.9	3.3	0

Ref	28FX65B	28FX65E	28FX65U	32FX65B	32FX65E	32FX65K	32FX65U
C1139	0.01UF	-	0.01UF	-	-	-	0.01UF
C1612	-	-		0.01UF	0.01UF	0.01UF	
C1613	-	-		100UF	100UF	100UF	
C1617	-	-		0.1UF	0.1UF	0.1UF	
CN1666	TAB	TAB	TAB	-	-	-	TAB
CN1802	3P	-	-	3P	3P	3P	-
CN1904	-	-	-	3P	3P	3P	-
IC1601	KA78R05-SYDTU	KA78R05-SYDTU	KA78R05-SYDTU	PQ05RF11	PQ05RF11	PQ05RF11	PQ05RF11
IC1602	KA278R05-YDTU	KA278R05-YDTU	KA278R05-YDTU	KA78R05-SYDTU	KA78R05-SYDTU	KA78R05-SYDTU	KA78R05-SYDTU
IC1604	KA78R09-YDTU	KA78R09-YDTU	KA78R09-YDTU	PQ09RF11	PQ09RF11	PQ09RF11	PQ09RF11
IC1605	-	-	KA78R33-YDTU	PQ05RF11	PQ05RF11	PQ05RF11	PQ05RF11
R1617	-	-		3.3	3.3	3.3	
R1623	-	-		220	220	220	
TU1326	TUNER/VIF (FR)	TUNER/VIF (AEP)	TUNER/VIF (UK)	TUNER/VIF (FR)	TUNER/VIF (AEP)	TUNER/VIF (AEP)	TUNER/VIF (UK)



A
B
C
D
E
F
G
H
I
J
K
L
M
N
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
1-675-169-13
(171740313)
SONY
A
B
TU1350 SUB TUNER
TU1326 MAIN TUNER
AUDIO AMP. CENTER SURROUND OR SUBWOOFER
AUDIO AMP. LEFT
AUDIO AMP. RIGHT
5V REGULATOR
9V REGULATOR
3.3V REGULATOR
FOR PRODUCTION USE ONLY
ADHESIVE MARK FOR PRODUCTION USE ONLY

A [PRINTED WIRING BOARD]



Semiconductor Location Table

IC		Q8150	A - 5	Q8405	G - 3	D8810	G - 4
IC8101	B - 5	Q8151	A - 5	Q8406	G - 2	D8811	D - 9
IC8150	B- 5	Q8152	A - 5	Q8501	F - 6	D8812	D - 8
IC8151	A - 4	Q8153	A - 5	Q8901	D - 1	D8813	G - 4
IC8200	J - 3	Q8154	A - 4	**DIODE**		D8814	G - 4
IC8201	J - 4	Q8156	B - 4	D8150	A - 5	D8900	A - 3
IC8202	I - 3	Q8157	C - 4	D8151	A - 5	D8901	J - 8
IC8301	F - 2	Q8200	J - 3	D8152	A - 5	D8902	A - 3
IC8302	F - 1	Q8201	J - 4	D8153	I - 4	D8903	A - 3
IC8401	I - 2	Q8202	I - 4	D8200	B - 8	D8904	J - 7
IC8402	H - 2	Q8300	D - 1	D8201	B - 8	D8905	J - 7
IC8500	E - 2	Q8302	E - 1	D8202	H - 9	D8906	I - 7
IC8550	G - 1	Q8303	F - 2	D8203	H - 8	D8907	I - 8
IC8601	I - 4	Q8305	E - 1	D8801	E - 8	D8908	I - 8
IC8602	H - 1	Q8306	F - 1	D8802	F - 4	D8909	I - 7
IC8603	I - 1	Q8308	E - 3	D8803	G - 3	D8910	I - 7
IC8604	I - 1	Q8309	F - 1	D8804	D - 9	D8911	I - 7
IC8700	C - 1	Q8310	E - 2	D8805	D - 8	D8912	D - 3
IC8801	F - 4	Q8401	H - 2	D8806	D - 8	D8913	H - 7
TRANSISTOR		Q8402	C - 7	D8807	D - 8	D8914	H - 7
Q8100	G - 9	Q8403	H - 3	D8808	D - 8	D8915	H - 7
Q8101	F - 9	Q8404	G - 2	D8809	G - 3		

IC Voltage Table

IC Voltage Table

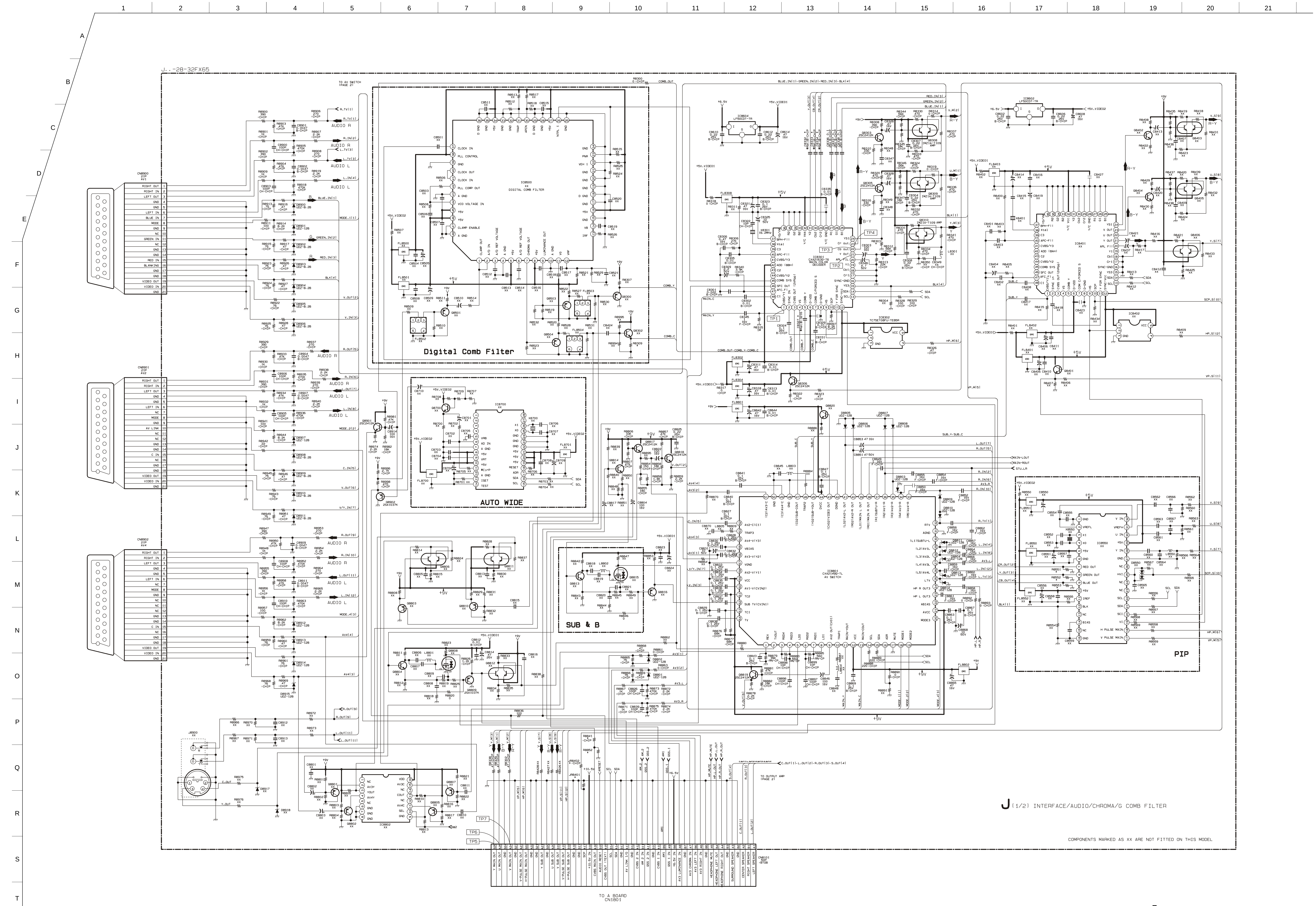
Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC8200	2-3	4.7	IC8500	1-2	1.5
	4-6	2.5		3	0.5
	7	0.6		6	2.6
	17	0.7		7	0.9
	21	5.0		9	1.0
	36	3.8		11	2.8
	37	3.7		12-13	1.8
	38	7.0		14	1.0
	40	7.0		22-23	5.0
	45	3.7		26	5.0
	56-57	3.8		30	5.0
	58	2.6		37	2.4
	60	3.8		40-42	1.9
	67	0.4		44	1.9
	68-69	1.5	IC8101	1	4.2
	71	2.4		3	4.1
	72	2.2		5	0.6
IC8201	1-3	5.0		8	0.5
	5-10	5.0	IC8801	1	1.8
	12-14	5.0		2-4	4.5
IC8301	1	2.4		5	0
	2	1.9		6-7	4.6
	3	1.5		8	0
	4	0.1		9	4.6
	5	2.4		10	3.4
	7	2.6		11	3.8
	9	0.3		13	4.5
	10	0.8		22-30	4.5
	11	2.5		32-41	4.5
	13-14	4.5		43	4.6
	20	2.4		45	3.7
	21	1.8		46	3.5
	22-23	1.9		47	4.5
	24	0.1		49	4.5
	25-27	2.5		51-80	4.5
	29	2.8	IC8151	2	2.4
	37	1.1		3	4.6
	38	4.0		4	4.6
IC8401	1	2.3		5	0.4
	2	1.9		6	4.6
	4	0.1		7	0.4
	9	0.3		9	0
	10	4.0		10	2.6
	11	2.4	IC8150	1	3.0
	20	2.4		2	2.5
	21	1.7		3	1.7
	22-23	1.9		6	4.3
	37	1.1		12	2.4
	38	4.0		13	4.6
	40	3.3		14	2.5
	47	3.8			
	48	1.8			

Semiconductor Voltage Table

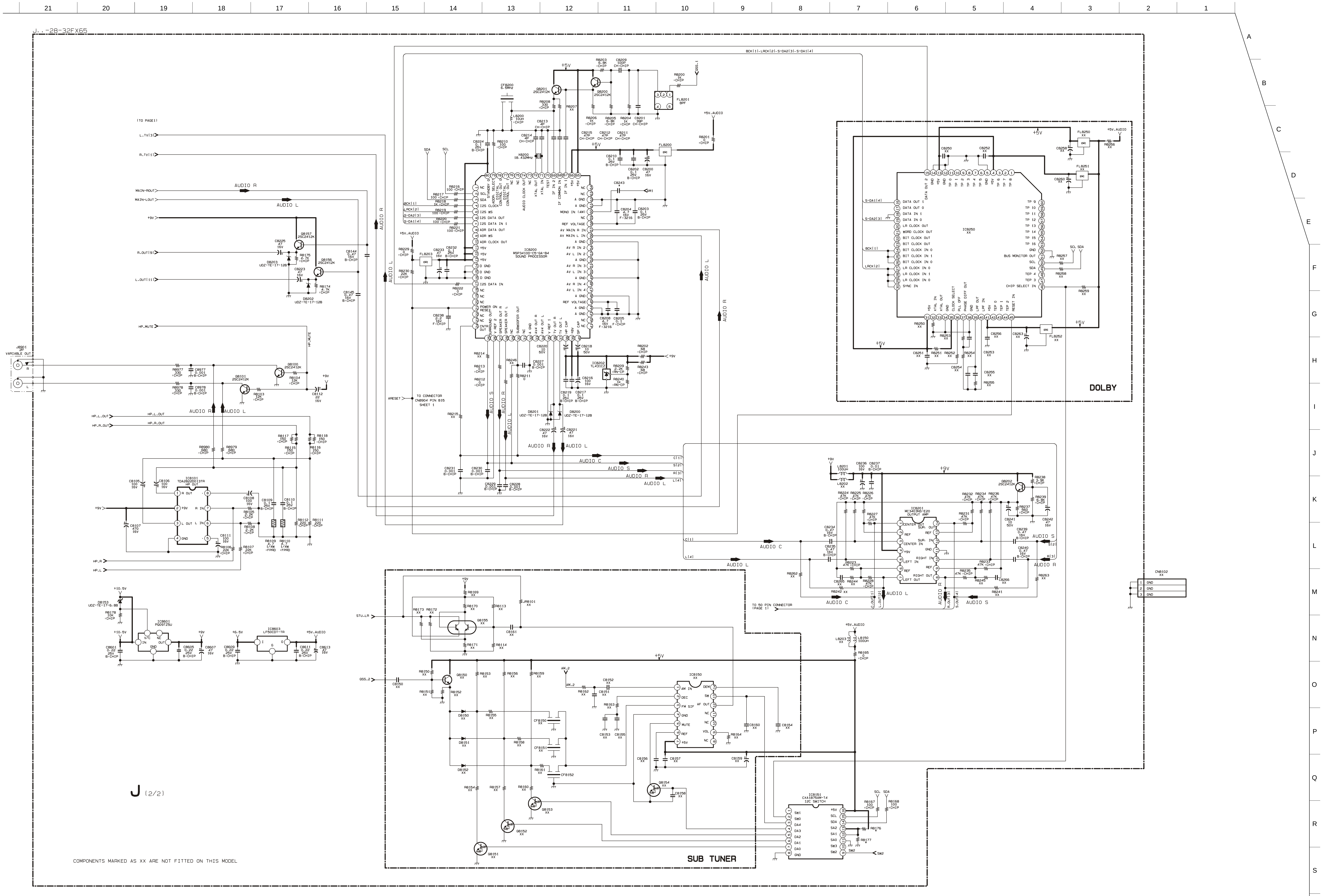
Ref	(e)	(b)	(c)	Ref	(e)	(b)	(c)
Q8150	2.9	3.6	5.0	Q8302	1.0	1.6	9.0
Q8151	0	0.4	4.8	Q8303	1.3	1.9	7.7
Q8152	0	4.6	0	Q8305	1.3	1.9	7.3
Q8153	0	0.4	4.8	Q8306	0.1	0.1	5.0
Q8154	0	4.6	0	Q8401	0.1	0.1	5.0
Q8156	3.9	4.6	9.0	Q8404	1.2	1.9	7.4
Q8157	3.9	4.6	9.0	Q8809	2.7	2.1	0
Q8200	1.9	2.5	5.0	Q8817	3.9	4.6	9.0
Q8201	1.2	1.9	5.0	Q8901	1.9	2.5	9.0
Q8202	5.1	5.8	9.0	**Ref**	**(s)**	**(g)**	**(d)**
Q8300	1.6	1.0	0	Q8815	1.8	0	0.6

Ref	28FX65B	28FX65E	28FX65U	32FX65B	32FX65E	32FX65K	32FX65U
C8243	0.33UF	0.33UF	0.33UF	-	-	-	0.33UF
C8327	1UF	1UF	1UF	-	-	-	1UF
C8331	0.01UF	0.01UF	0.01UF	100	100	100	0.01UF
C8332	0.01UF	0.01UF	0.01UF	100	100	100	0.01UF
C8333	0.01UF	0.01UF	0.01UF	100	100	100	0.01UF
C8334	0.01UF	0.01UF	0.01UF	100	100	100	0.01UF
JR8401	SHORT 0	SHORT 0	SHORT 0	-	-	-	SHORT 0
JR8402	-	-	-	SHORT 0	SHORT 0	SHORT 0	-
R8176	-	-	-	SHORT 0	SHORT 0	SHORT 0	-
R8177	SHORT 0	SHORT 0	SHORT 0	-	-	-	SHORT 0
R8303	-	-	-	SHORT 0	SHORT 0	SHORT 0	-
R8309	-	-	-	SHORT 0	SHORT 0	SHORT 0	-
R8551	-	-	-	SHORT 0	SHORT 0	SHORT 0	-
R8552	-	-	-	SHORT 0	SHORT 0	SHORT 0	-
R8553	-	-	-	SHORT 0	SHORT 0	SHORT 0	-
R8841	-	-	-	SHORT 0	SHORT 0	SHORT 0	-
R8852	SHORT 0	SHORT 0	SHORT 0	-	-	-	SHORT 0

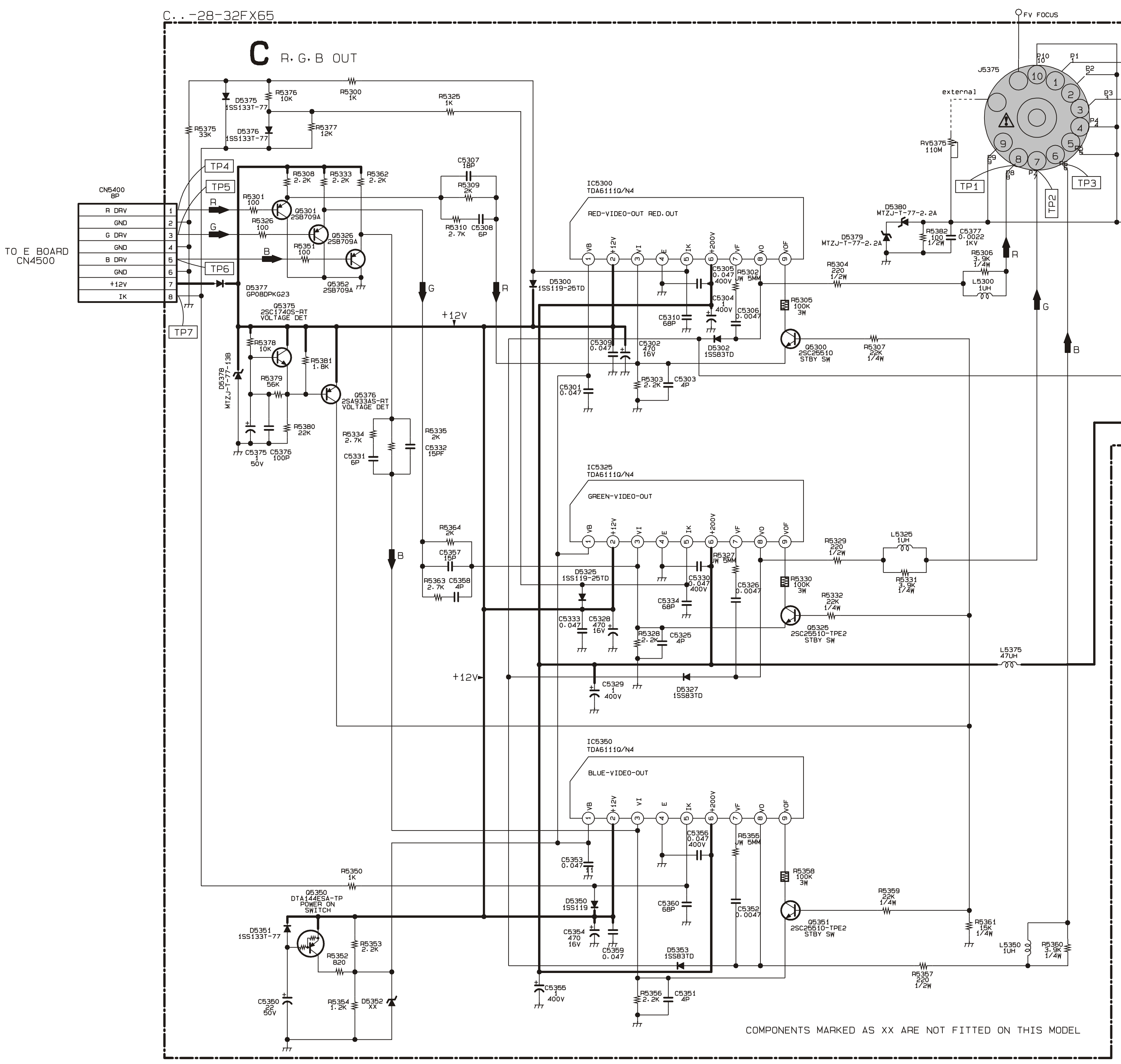
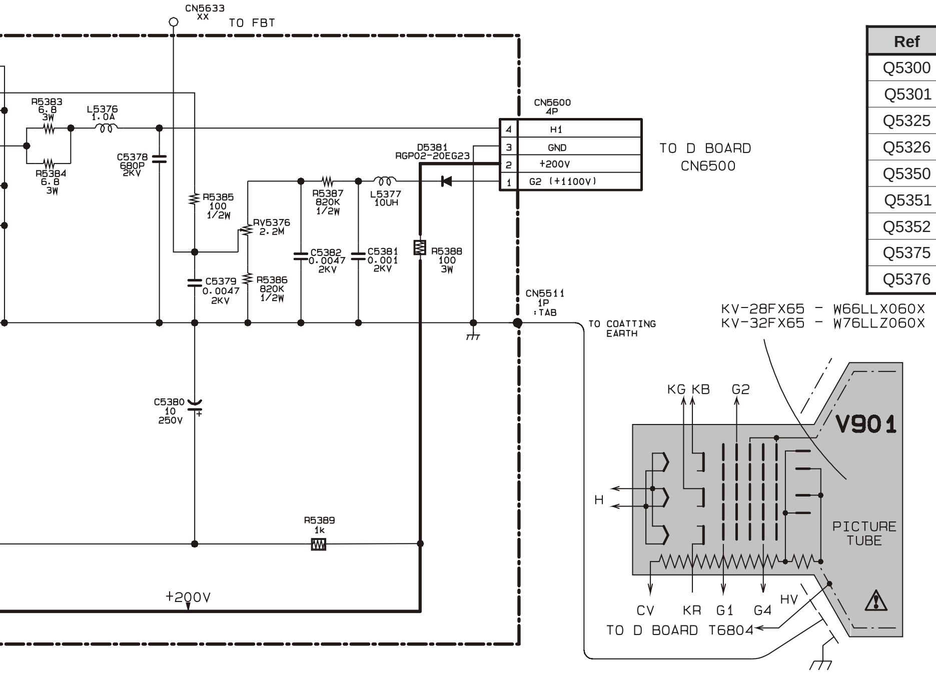
J **[PRINTED WIRING BOARD]**


J..-28-32FX65
TO AV SWITCH (PAGE 2)
CN8900 21P AV1
CN8901 21P AV2
CN8902 21P AV4
IC8500 DIGITAL COMB FILTER
Digital Comb Filter
IC8700
AUTO WIDE
SUB & B
IC8604 LF50CDT-TR
IC8301 CXA2163Q-T6 MAIN COLOR DECODER
IC8302 TC7SET08FU-TE85R
IC8401
IC8402
IC8602 LF50CDT-TR
IC8801 CXA2149Q-TL AV SWITCH
IC8550
PIP
IC8802
J8900
CN1801 50P B70B
TO A BOARD CN1801
TO OUTPUT AMP (PAGE 2)
TP1
TP2
TP3
TP4
TP5
TP6
TP7
J (1/2) INTERFACE/AUDIO/CHROMA/G COMB FILTER
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

J [INTERFACE, AUDIO, CHROMA (Page 1/2)]


21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
A B C D E F G H I J K L M N O P Q R S
J..-28-32FX65
(TO PAGE1)
L_TV[3]
R_TV[1]
MAIN-ROUT
MAIN-LOUT
+9V
R_OUT[9]
L_OUT[11]
HP_MUTE
J8901 VARIABLE OUT
HP_L_OUT
HP_R_OUT
HP_R
HP_L
AUDIO R
AUDIO L
AUDIO C
AUDIO S
IC8101 TDA8620D13TR HP OUT
IC8200 MSP3410D-C5-GA-B4 SOUND PROCESSOR
CF8200 6.5MHz
X8200 18.432MHz
Q8200 2SC2412K
Q8201 2SC2412K
FL8201 BPF
FL8200
FL8203
IC8202 TL431C
D8200 UDZ-TE-17-12B
D8201 UDZ-TE-17-12B
BCK[1]-LRCK[2]-S-DA2[3]-S-DA1[4]
S-DA1[4]
S-DA2[3]
BCK[1]
LRCK[2]
SDA
SCL
+5V
+5V_AUDIO
AM1
QSS_1
ARESET
TO CONNECTOR CN8904 PIN B15 SHEET I
IC8250
DOLBY
FL8250
FL8251
FL8252
IC8201 MC3403NS-E20 OUTPUT AMP
Q8202 2SC2412K
CN8102
GND
TO 50 PIN CONNECTOR (PAGE 1)
IC8601 PQ09TZ5U
IC8603 LF50CDT-TR
D8153 UDZ-TE-17-6.8B
+10.5V
+6.5V
STU_LR
QSS_2
AM_2
IC8150
IC8151 CXA1875AM-T4 I2C SWITCH
CF8150
CF8151
CF8152
SW2
SUB TUNER
J (2/2)
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

J **[INTERFACE, AUDIO, CHROMA (Page 2/2)]**



C..-28-32FX65
C R.G.B OUT
TO E BOARD CN4500
CN5400 8P
R DRV
GND
G DRV
GND
B DRV
GND
+12V
IK
TP4
TP5
TP6
TP7
IC5300 TDA6111Q/N4
RED-VIDEO-OUT RED.OUT
IC5325 TDA6111Q/N4
GREEN-VIDEO-OUT
IC5350 TDA6111Q/N4
BLUE-VIDEO-OUT
Q5375 2SC1740S-RT VOLTAGE DET
Q5376 2SA933AS-RT VOLTAGE DET
Q5350 DTA144ESA-TP POWER ON SWITCH
Q5300 2SC2551O STBY SW
Q5325 2SC2551O-TPE2 STBY SW
Q5351 2SC2551O-TPE2 STBY SW
+12V
+200V
FV FOCUS
CN5633 XX
TO FBT
J5375
external
TP1
TP2
TP3
CN5600 4P
H1
GND
+200V
G2 (+1100V)
TO D BOARD CN6500
CN5511 1P TAB
TO COATTING EARTH
KV-28FX65 - W66LLX060X
KV-32FX65 - W76LLZ060X
KG KB G2
V901
H
PICTURE TUBE
CV KR G1 G4 HV
TO D BOARD T6804

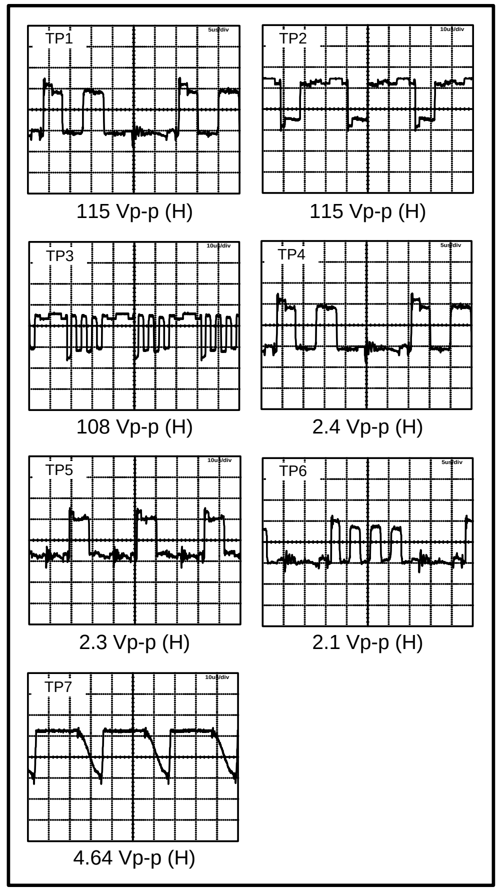
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

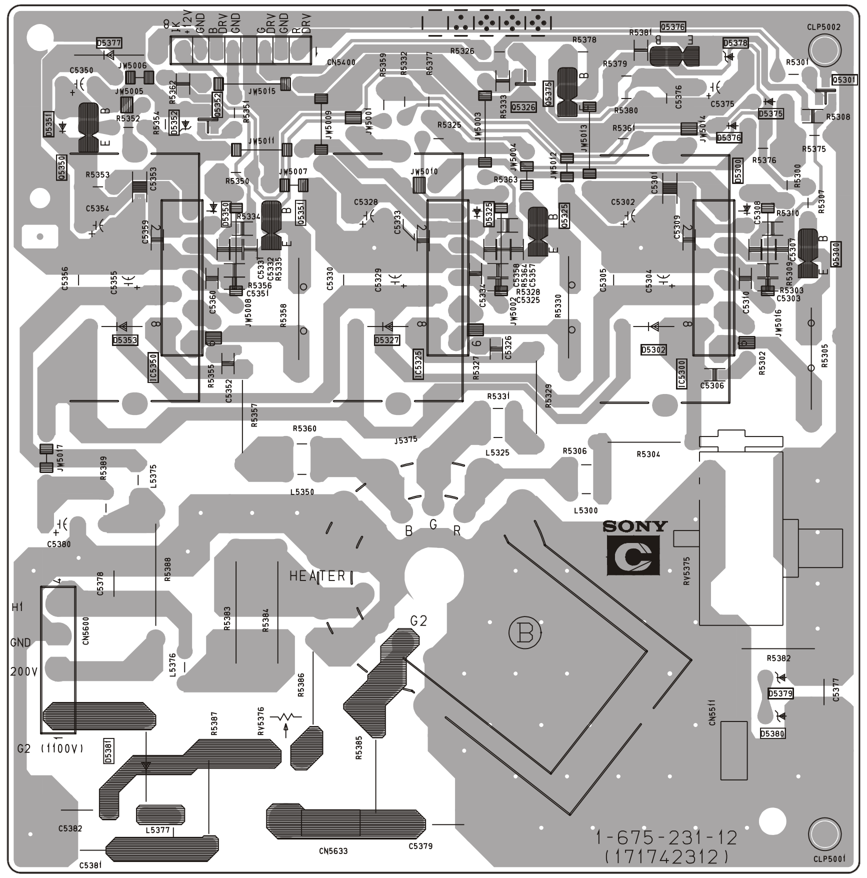
Ref	(e)	(b)	(c)
Q5300	3.8	4.5	3.9
Q5301	3.7	3.1	0
Q5325	3.8	4.5	3.9
Q5326	4.0	3.3	0
Q5350	11.2	11.1	4.0
Q5351	3.8	4.5	3.9
Q5352	3.9	3.2	0
Q5375	10.6	11.1	11.2
Q5376	11.2	10.6	11.1

IC Voltage Table

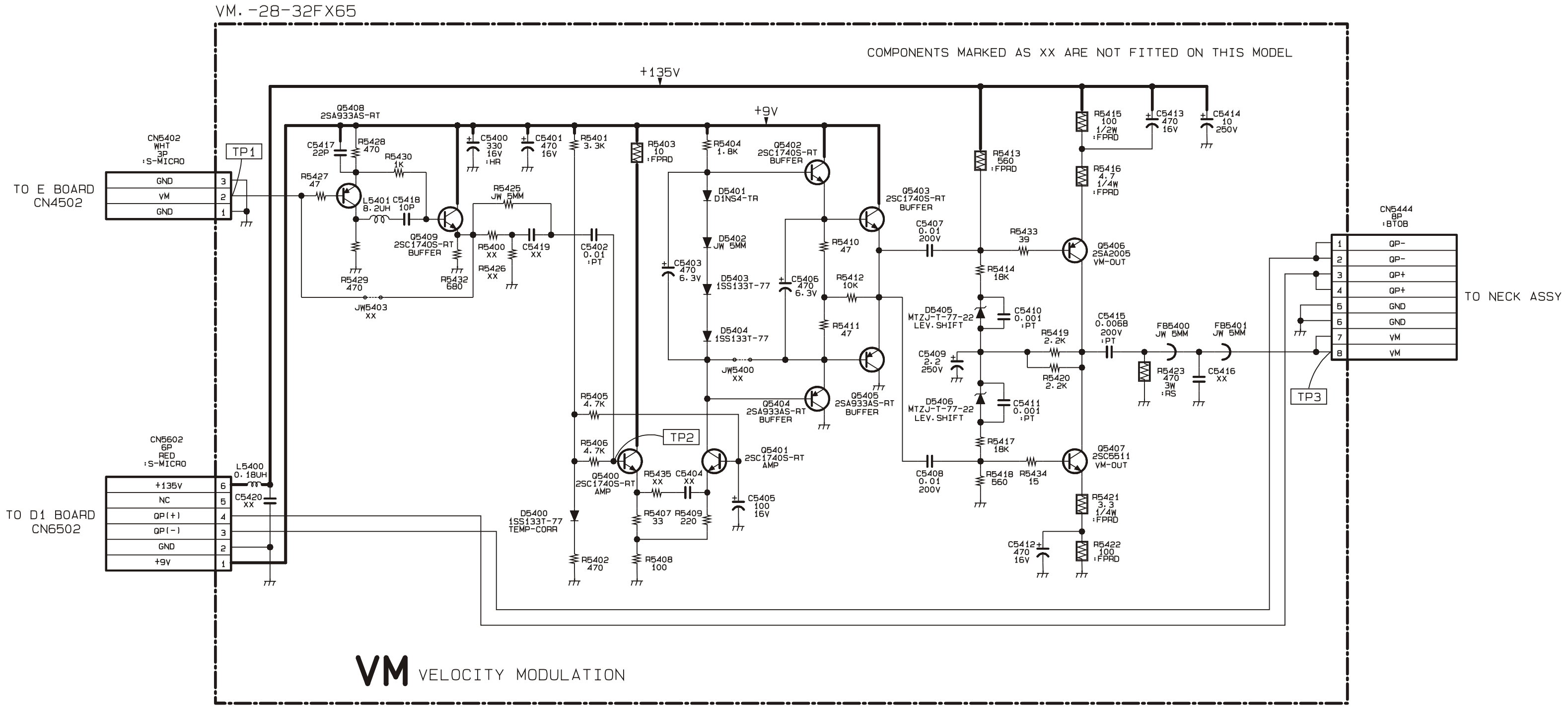
Ref No	Pin No	Voltage (V)
IC5300	1	4.0
	3	3.8
	5	8.2
	7	155.0
	8	158.0
	9	154.0
IC5325	1	4.0
	3	3.9
	5	8.5
	7	145.0
	8	157.0
	9	144.0
IC5350	1	4.0
	3	3.9
	5	8.2
	7	150.0
	8	158.0
	9	149.0

C board Waveforms


TP1 115 Vp-p (H)
TP2 115 Vp-p (H)
TP3 108 Vp-p (H)
TP4 2.4 Vp-p (H)
TP5 2.3 Vp-p (H)
TP6 2.1 Vp-p (H)
TP7 4.64 Vp-p (H)

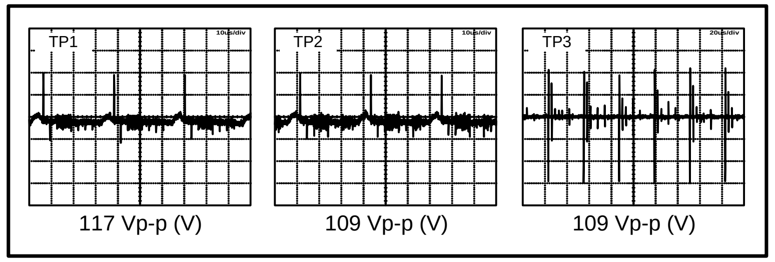

SONY
HEATER
G2
B
G
R
H1
GND
200V
G2 (1100V)
1-675-231-12
(171742312)

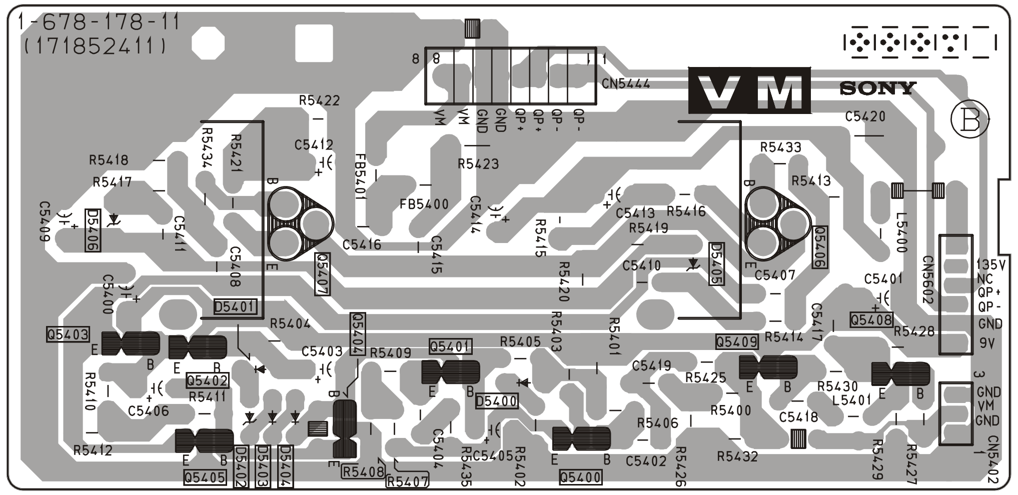
C [PRINTED WIRING BOARD]


VM.-28-32FX65
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL
+135V
+9V
TO E BOARD CN4502
TO D1 BOARD CN6502
TO NECK ASSY
CN5402
CN5602
CN5444
TP1
TP2
TP3
VM VELOCITY MODULATION

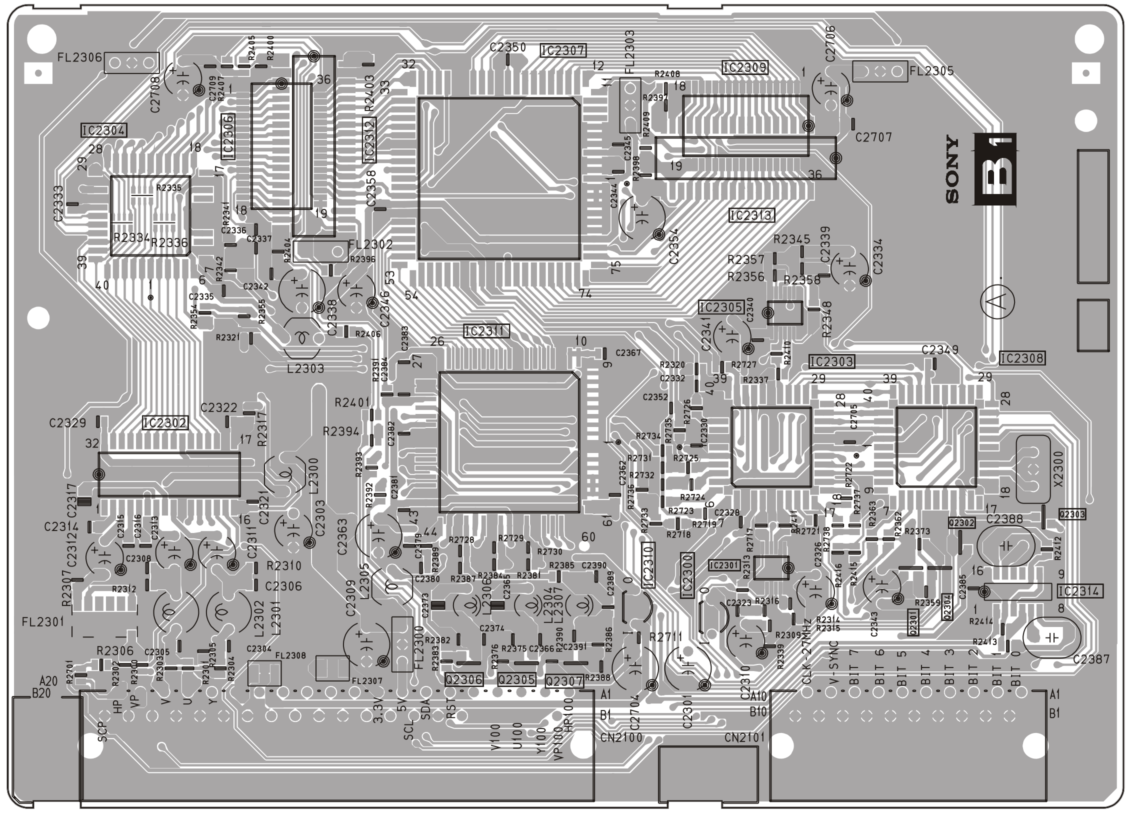
Ref	(e)	(b)	(c)
Q5400	0.9	1.5	9.0
Q5401	1.0	1.6	5.2
Q5402	6.0	6.6	9.0
Q5403	5.9	6.0	9.0
Q5404	5.2	5.9	0
Q5405	5.9	5.8	0
Q5406	135.1	134.6	68.2
Q5407	0.8	1.4	68.2
Q5408	7.6	6.9	1.4
Q5409	6.9	7.5	9.0

VM board Waveforms

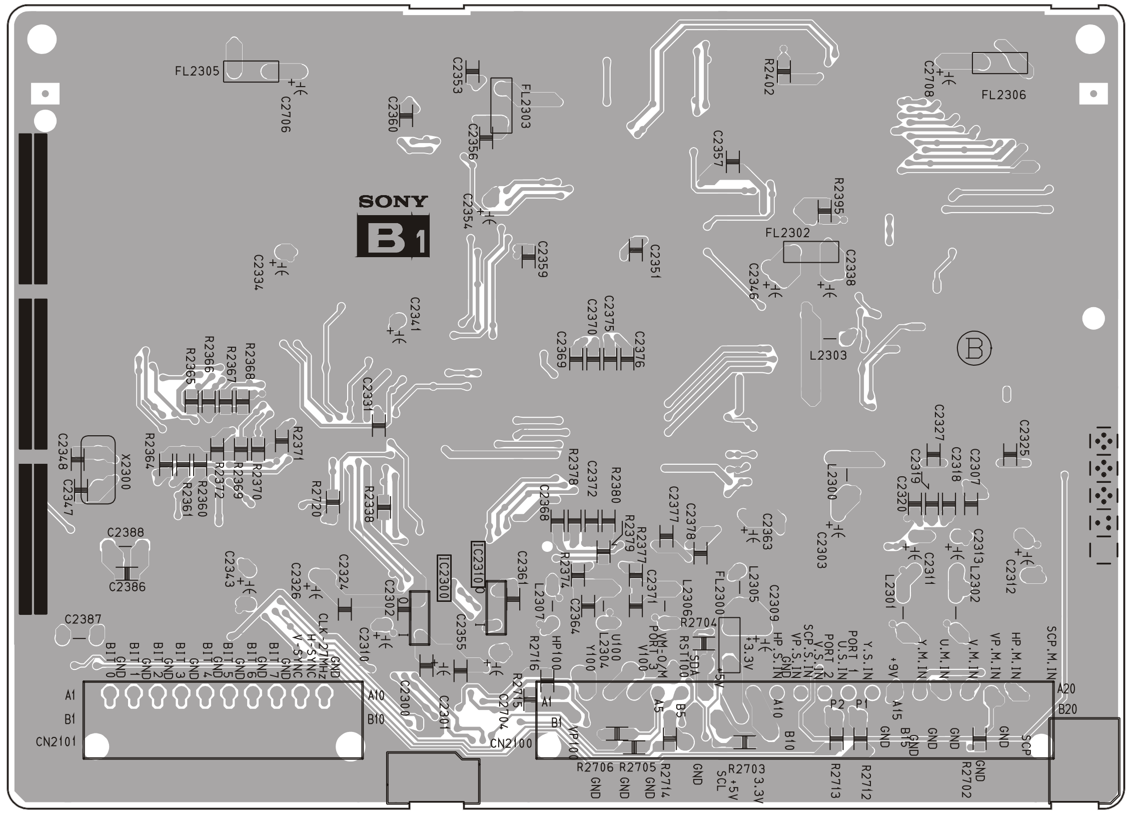



1-678-178-11
(171852411)
VM
SONY
CN5444
CN5602
CN5402

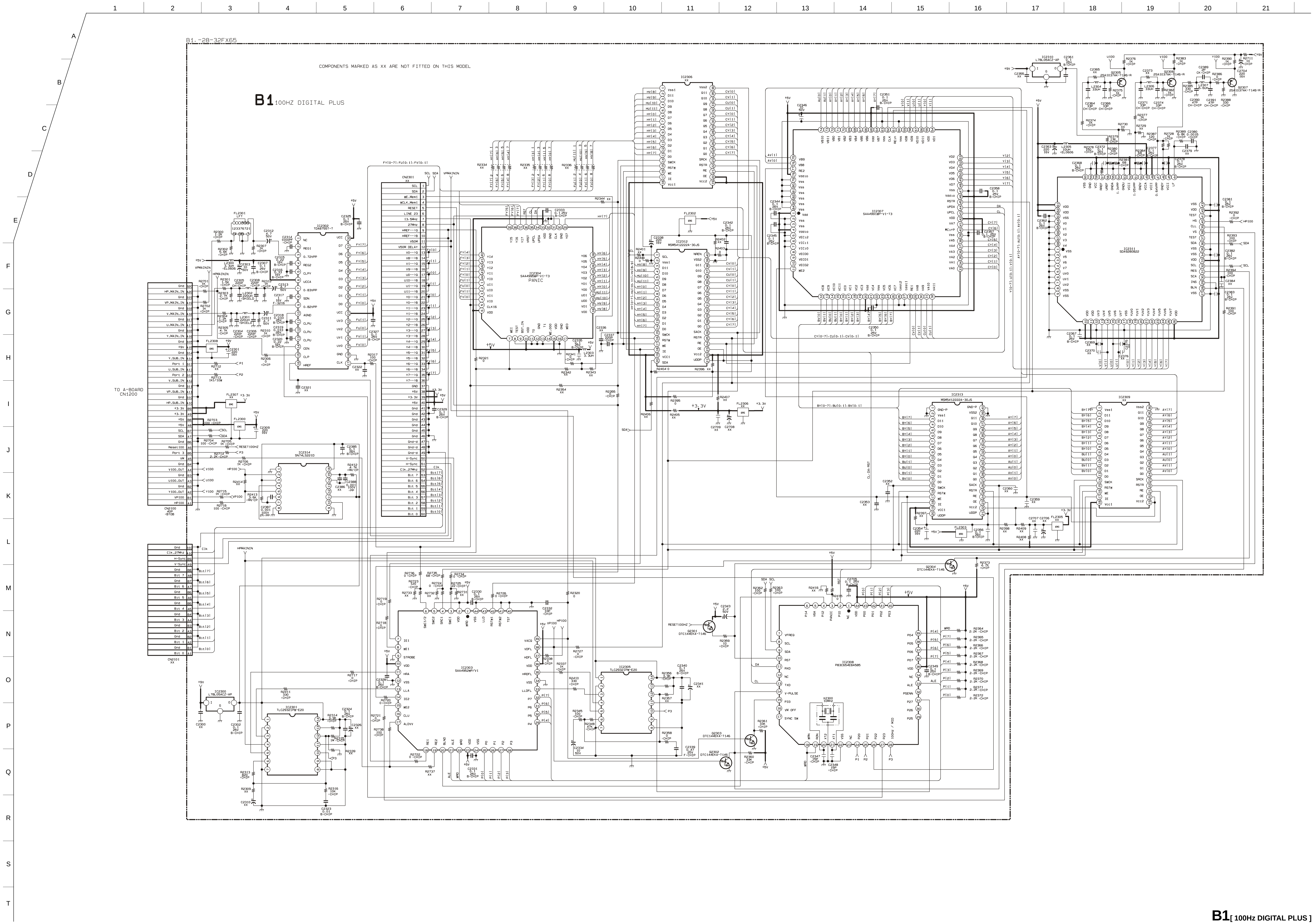
VM [PRINTED WIRING BOARD]


SONY
B1
CN2100
CN2101

B1 [PRINTED WIRING BOARD [A] SIDE]


SONY
B1
CN2101
CN2100

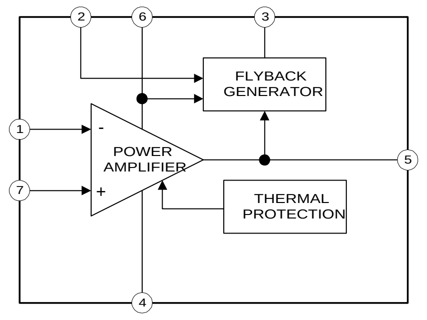
B1 [PRINTED WIRING BOARD [B] SIDE]


B1-28-32FX65
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL
B1 100HZ DIGITAL PLUS
TO A-BOARD CN1200
CN2100
CN2101
CN2301
IC2300 L78L05ACZ-AP
IC2301 TLC2932IPW-E20
IC2302
IC2303 SAA4952WP/V1
IC2304 SAA4995WP/V1-T3 PANIC
IC2305 TLC2932IPW-E20
IC2306
IC2307 SAA4991WP/V1-T3
IC2308 P83C654EBA585
IC2309
IC2310 L78L05ACZ-AP
IC2311 SDA9280B22
IC2312 MSM5412222A-30JS
IC2313 MSM5412222A-30JS
IC2314 SN74LS221D
X2300 10MHz

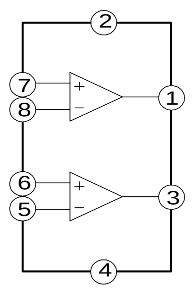
B1[100Hz DIGITAL PLUS]

5-5. IC BLOCK DIAGRAMS

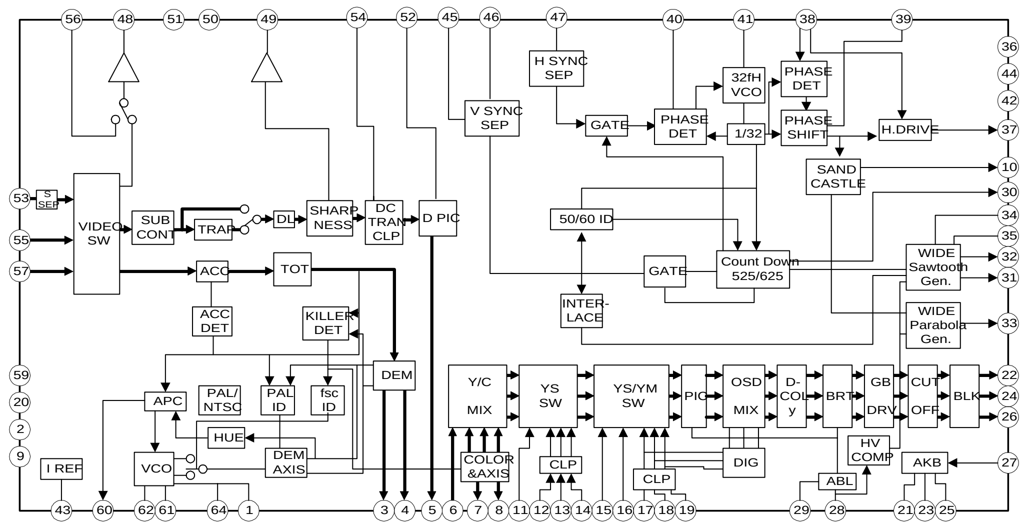
D BOARD IC6700 STV 9379


2
6
3
1
7
5
4
FLYBACK GENERATOR
POWER AMPLIFIER
THERMAL PROTECTION
-
+

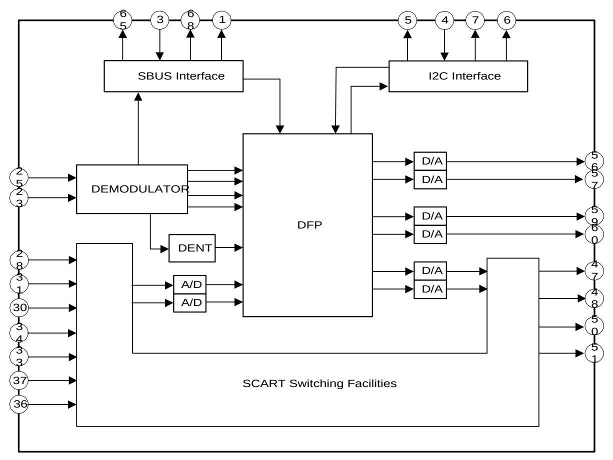
J BOARD IC8101 TDA2822D



E BOARD IC4301 CXA2100Q-TL

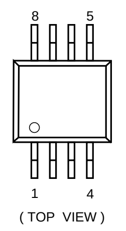

56
48
51
50
49
54
52
45
46
47
40
41
38
39
36
44
42
37
10
30
34
35
32
31
33
22
24
26
27
53
55
57
59
20
2
9
43
60
62
61
64
1
3
4
5
6
7
8
11
12
13
14
15
16
17
18
19
29
28
21
23
25
S SEP
VIDEO SW
SUB CONT
TRAP
DL
SHARP NESS
DC TRAN CLP
D PIC
V SYNC SEP
H SYNC SEP
GATE
PHASE DET
32fH VCO
1/32
PHASE DET
PHASE SHIFT
H.DRIVE
SAND CASTLE
50/60 ID
GATE
Count Down 525/625
INTER-LACE
WIDE Sawtooth Gen.
WIDE Parabola Gen.
ACC
TOT
ACC DET
KILLER DET
DEM
APC
PAL/ NTSC
PAL ID
fsc ID
HUE
VCO
DEM AXIS
I REF
Y/C MIX
COLOR &AXIS
YS SW
CLP
YS/YM SW
CLP
PIC
OSD MIX
D-COL y
DIG
BRT
GB DRV
CUT OFF
BLK
HV COMP
ABL
AKB

J BOARD IC8200 MSP3410D-QA-B4

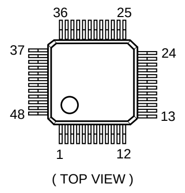

65
3
68
1
5
4
7
6
SBUS Interface
I2C Interface
25
23
DEMODULATOR
DFP
DENT
A/D
A/D
D/A
D/A
D/A
D/A
D/A
D/A
56
57
59
60
47
48
50
51
28
31
30
34
33
37
36
SCART Switching Facilities

5-4 SEMICONDUCTORS

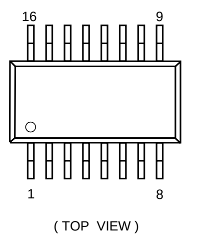
BA7046F
BA7046F-T1
LM393PS-E20
MB3793-42NF
MB3793-42NF-ER
NJM2240M
NJM2240M(TE2)
NJM3404AD


8
5
1
4
(TOP VIEW)

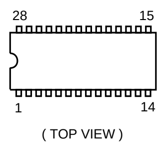
CXA1855Q-T6


36
25
37
24
48
13
1
12
(TOP VIEW)

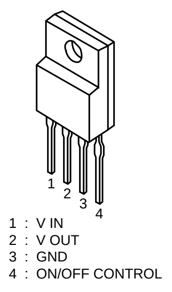
CXA1875AM-T4
HE4094BT
MC14052BDR2
MC74F157ADR2
SN74LS221D
74HCT4046AD/S470


16
9
1
8
(TOP VIEW)

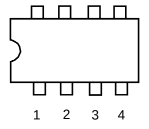
CXD2053S
TDA4780/V3


28
15
1
14
(TOP VIEW)

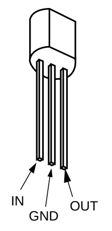
KA78R05TU
KA78R09TU
KA78R33TU


1
2
3
4
1 : V IN
2 : V OUT
3 : GND
4 : ON/OFF CONTROL

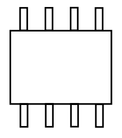
CAD005AD
LM358
LM393N
M5216P
M24C32-BN6
ST24C16FB6
TDA2822M
UPC393C



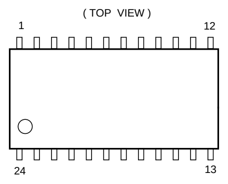
LM78L05ACZ
LM78L12ACZ
L78L05ACZ-AP
L78L12ACZ-AP



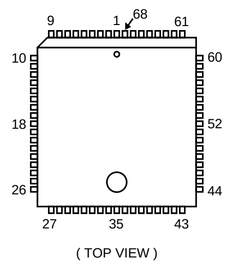
MB3793-42PNF-ER



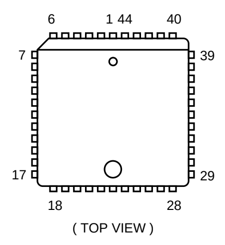
MB88141PF-ER


(TOP VIEW)
1
12
24
13

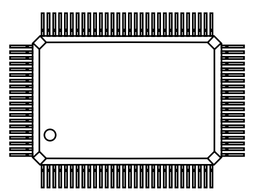
MSP3410D-QA-B4
SAA7185WP
SDA5273P-C134-GEG
SDA5275


9
1
68
61
10
60
18
52
26
44
27
35
43
(TOP VIEW)

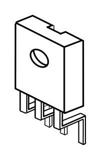
M27C800-100K1


6
1 44
40
7
39
17
29
18
28
(TOP VIEW)

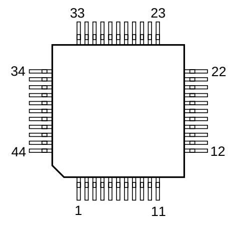
MSM65355GS
SAB-C161R1-LM



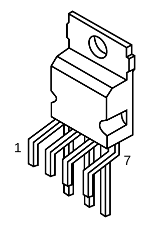
SBX1981-51



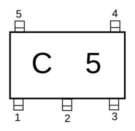
SDA9361


33
23
34
22
44
12
1
11

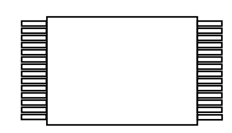
STV9379



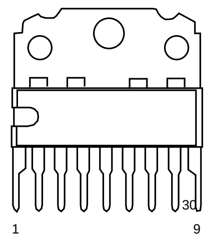
TC4S69F



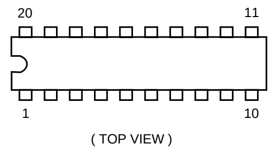
TC55257DFTL-70V-EL



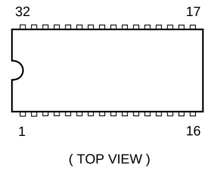
TDA6111Q/N4



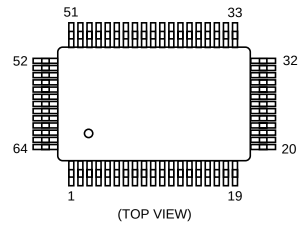
TDA7309D013TR


20
11
1
10
(TOP VIEW)

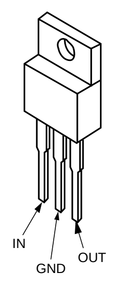
SDA9288X-B121
TDA9143/N2
TDA9144/N2
TDA9170T
MSM534031E3Y-Z


32
17
1
16
(TOP VIEW)

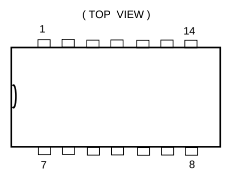
TDA9320H-N1-518


51
33
52
32
64
20
1
19
(TOP VIEW)

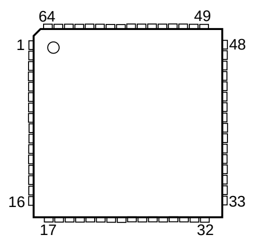
TEA6422DT



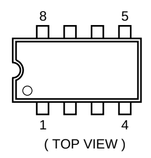
TLC2933


(TOP VIEW)
1
14
7
8

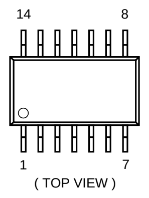
TLC5733A


64
49
1
48
16
33
17
32

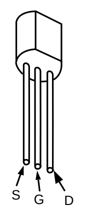
TOP209P


8
5
1
4
(TOP VIEW)

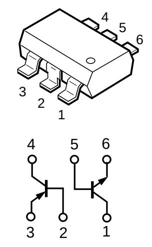
U2860B-BFPG3
74LVC08D


14
8
1
7
(TOP VIEW)

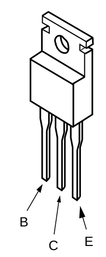
BC546B
BC556B



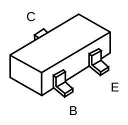
IMZ1A-T109


4
5
6
3
2
1
4
5
6
3
2
1

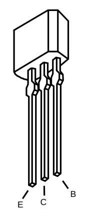
IRF614
IRF620



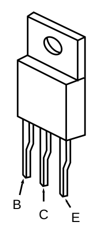
DTA144EK	DTC144EK
DTA144EK-T146	DTC144EK-T146
DTC114EK	2SA1037K-T-146-R
DTC114YKA-T146	2SA1162-G
DTC123EK	2SC2412K-QR
DTC123EK-T146	2SC2412K-T-146-R
DTC124EKA-T146	



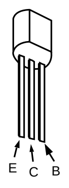
DTA144ESA	2SA933AS-RT
DTA144ESA-TP	2SA933AS-QRT
DTC114ESA-TP	2SA933S-RT
DTC144ESA-TP	2SC1740S-RT
2SA1175-HFE	2SC2785-HFE
2SA733-K	



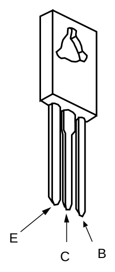
2SA1837



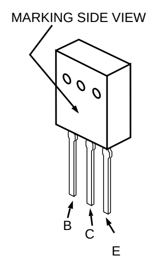
2SC2500-B
2SC2551-O
2SC2551O-TPE2



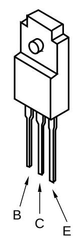
2SC2688-LK
2SC3840K



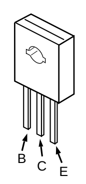
2SC3997CA


MARKING SIDE VIEW
B
C
E

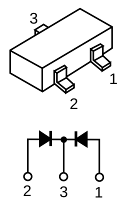
2SC4793



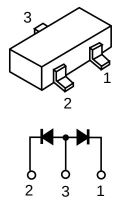
2SD2396H



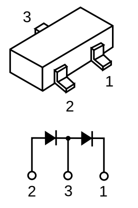
DAN202K
DAN202K-T-146



DAP202K
DAP202K-T-146

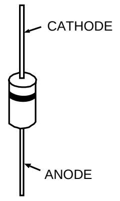


DA204K
DA204K-T-146

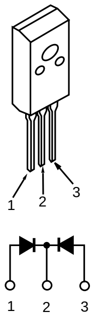


D1NL20-TA
D1NL20U-TR
D1NS4-TR
EGP20G
EL1Z
GP08D
GP08DPKG23
R2K-V1

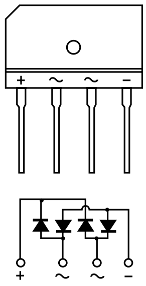
RGP02-20EG23
RGP10GPKG23
RGP15GPKG23
S2LA20F
1SS133T-77
1SS83
1SS83TD


CATHODE
ANODE

D10SC4M-F
D10SC6M

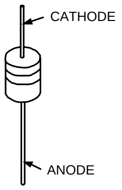


D4SB60L
D4SB60L-F
RBA-402L

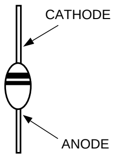


ERA15
ERA38-06TP1
ERA82-004TP1
GP08DPKG23
MTZJ-T-77-13B
MTZJ-T-77-15
MTZJ-T-77-2.2A
MTZJ-T-77-3-3B
MTZJ-T-77-3.6A
MTZJ-T-77-4.7B
MTZJ-T-77-5.6B
MTZJ-T-77-6.8

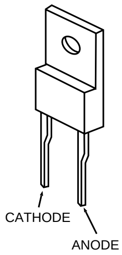
MTZJ-T-77-7.5B
MTZJ-T-77-9.1
MTZJ-T-77-12
MTZJ-T-77-22
MTZJ-T-77-18B
MTZJ-33C
RD5.6ESB2
RD9.1ESB2
PGKE200AG23
1SS119-25
1SS119-25TD


CATHODE
ANODE

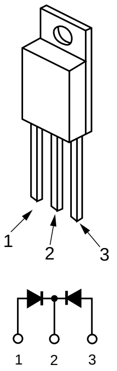
ERC04-06SE


CATHODE
ANODE

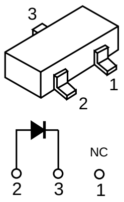
ERD08M-15


CATHODE
ANODE

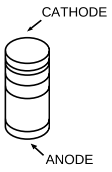
ESAC39M-06C
ESAC39M-06CF38



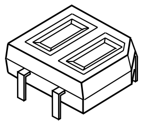
MA3033-L
MA3033L-TX
MA3056M-TX
MA3062M-TX
MA3030-H-(TX)



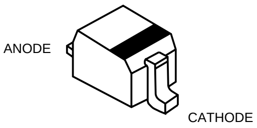
MA3051L-TX


CATHODE
ANODE

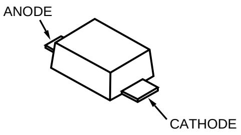
MA73-TX



1SS355TE-17
RD12SB2
UDZ-TE-17-3.9B
UDZ-TE-17-4.7B
UDZS-TE-17-5.6B
UDZ-TE-17-6.2B
UDZ-TE-17-6.8B
UDZ-TE-17-8.2B
UDZ-TE-12B


ANODE
CATHODE

UF4005PKG23


ANODE
CATHODE

SECTION 6
EXPLODED VIEWS

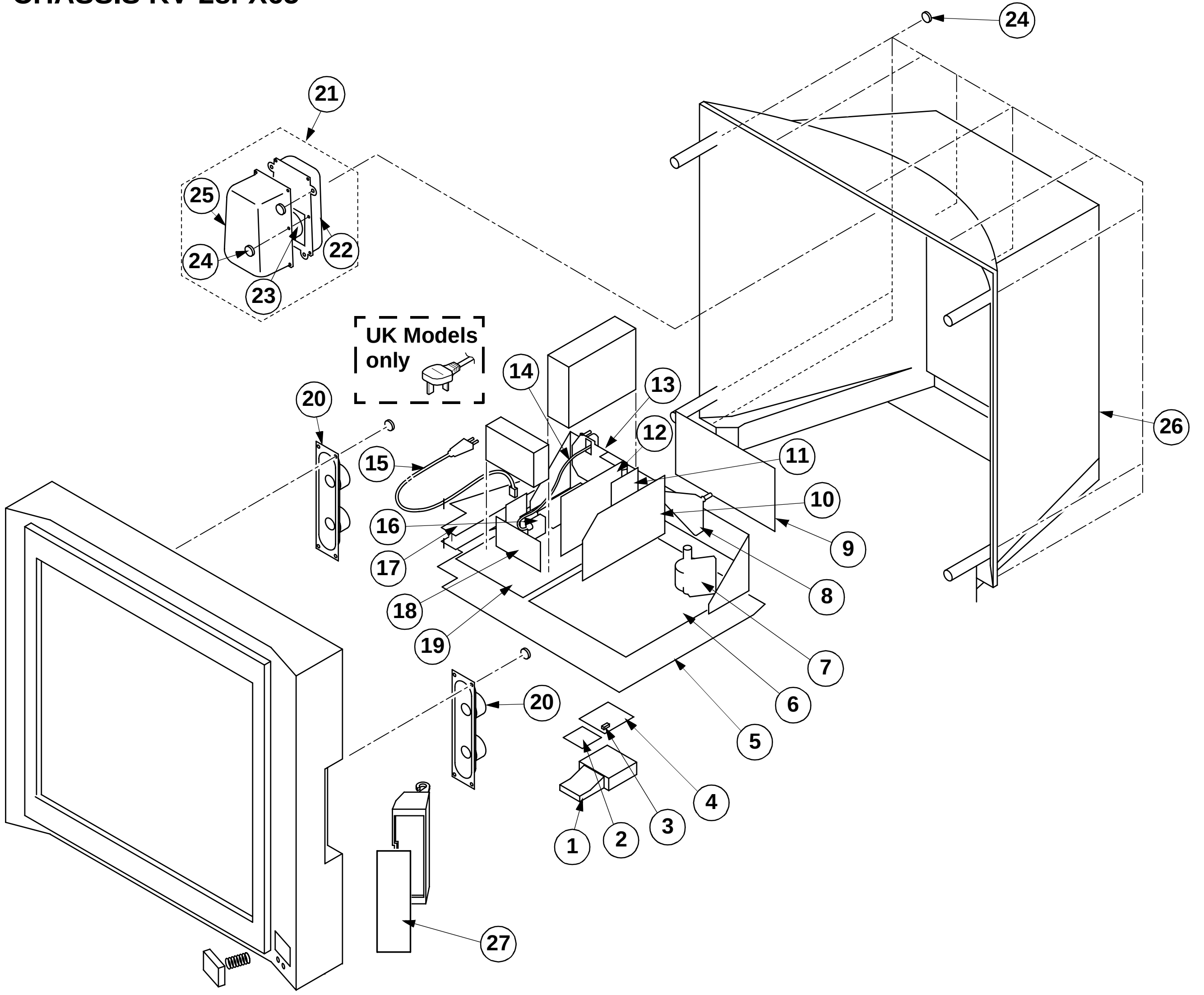
Note : Les composants indentifies par une trame et par une marque ⚠ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

NOTE :

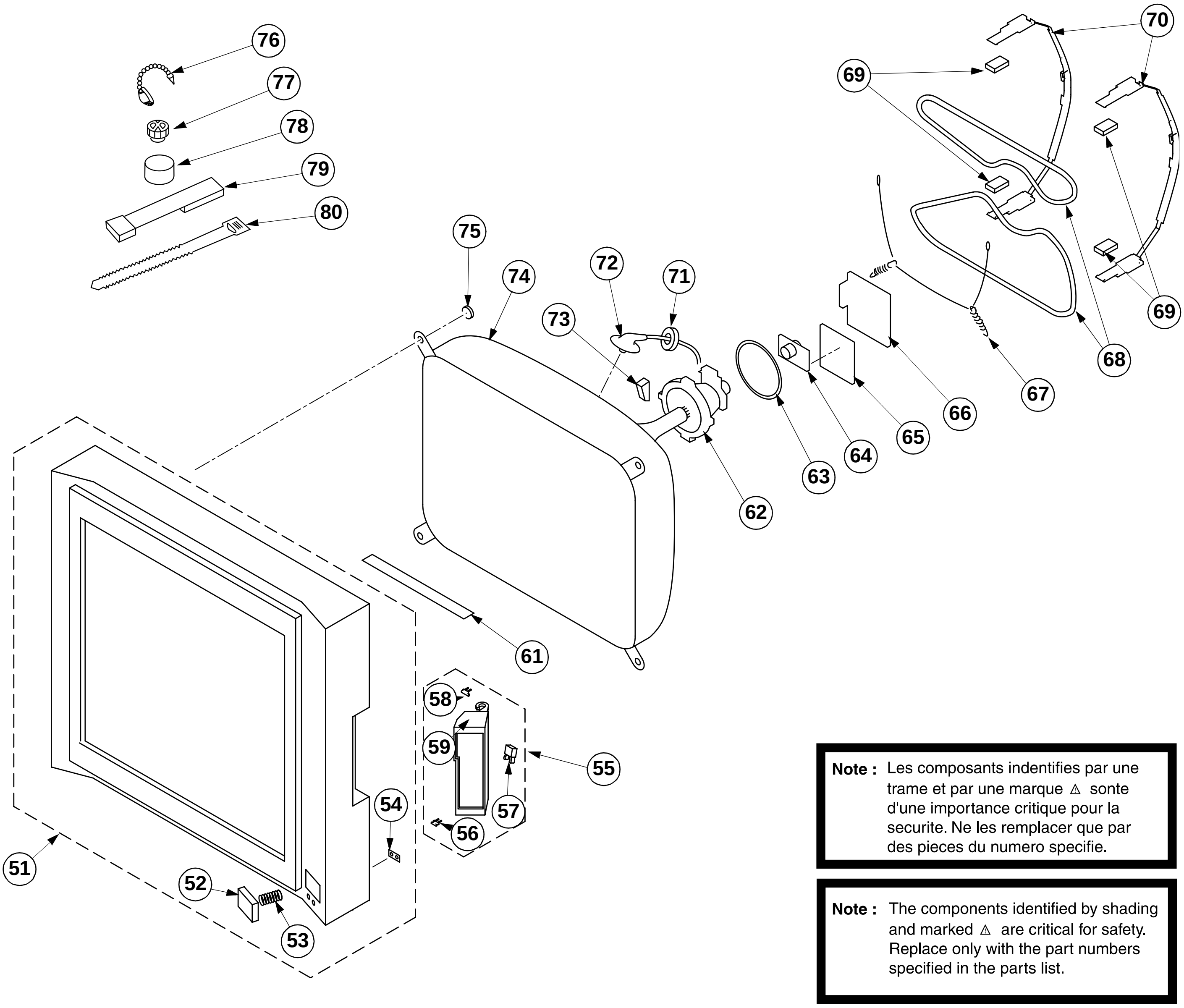
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

6-1. CHASSIS KV-28FX65



REF. NO.		PART.NO	DESCRIPTION	REMARK
1		*4-205-697-01	H/F BRACKET	
2		*A-1646-229-A	H8 BOARD, COMPLETE	
3	⚠	1-571-433-21	SWITCH, PUSH (AC POWER)	
4		*A-1624-091-A	F4 BOARD, COMPLETE	
5		*4-205-196-22	MAIN BRACKET	
6		*A-1640-328-A	D BOARD, COMPLETE	
7	⚠	1-453-340-21	TRANSFORMER ASSY, FLYBACK (NX4522//U214)	
8		*4-204-476-04	BRACKET, J1	
9		*A-1651-142-A	J BOARD, COMPLETE	
10		*A-1640-382-A	D1 BOARD, COMPLETE	
11		*A-1640-383-A	E BOARD, COMPLETE	
12		*A-1620-112-A	B1 BOARD, COMPLETE	
13		*4-204-477-04	BRACKET, J2	
14		1-790-082-11	CABLE, RF	
15	⚠	1-792-389-11	CORD, POWER (KV-28FX65B/28FX65E)	
	⚠	1-792-592-11	CORD, PLUG WITH POWER (KV-28FX65U)	
16		1-693-340-11	TUNER/VIF(FR) (KV-28FX65B)	
		1-693-338-11	TUNER/VIF(AEP) (KV-28FX65E)	
		1-693-339-11	TUNER/VIF(UK) (KV-28FX65U)	
17		*A-1624-086-A	F1 BOARD, COMPLETE	
18		*A-1634-060-A	M1 BOARD, COMPLETE	
19		*A-1631-128-A	A BOARD, COMPLETE (KV-28FX65B)	
		*A-1631-126-A	A BOARD, COMPLETE (KV-28FX65E)	
		*A-1631-127-A	A BOARD, COMPLETE (KV-28FX65U)	
20		1-529-899-11	SPEAKER (24X4.2CM)	
21		*A-1678-192-A	WOOFER ASSY (SP)	22-25
22		*4-204-775-21	BAFFLE, WOOFER	
23		1-529-417-11	SPEAKER (8CM)	
24		4-039-358-01	SCREW +BVTP 4X16 TYPE 2 IT-3	
25		*4-204-776-21	BOX, WOOFER	
26		4-205-700-01	REAR COVER	
27		*A-1646-220-A	H7 BOARD COMPLETE	

6-2. PICTURE TUBE KV-28FX65

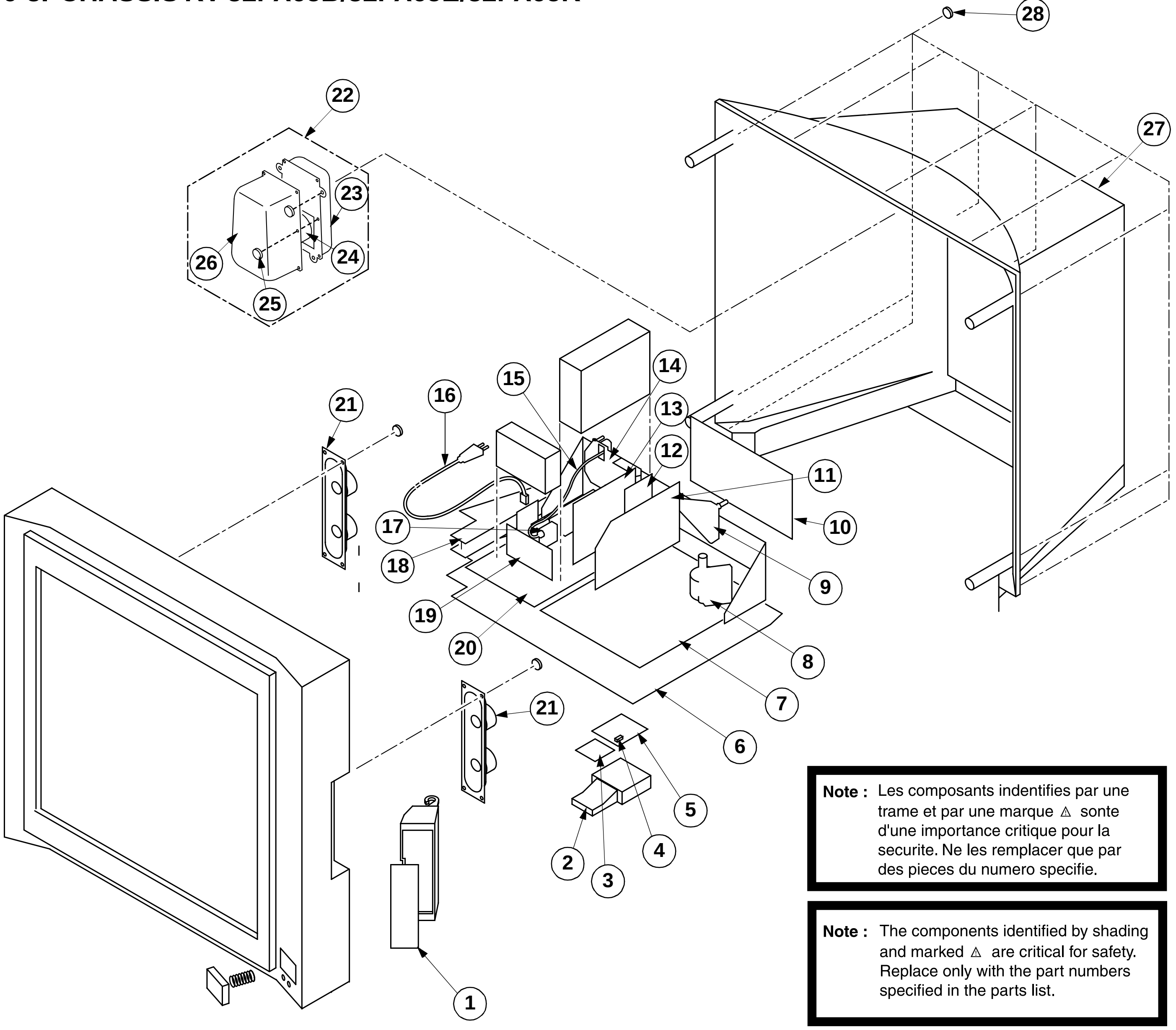


Note : Les composants indentifies par une trame et par une marque ⚠ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

REF. NO.		PART.NO	DESCRIPTION	REMARK
51		X-4200-630-1	BEZNET ASSY	52-54
52		4-205-699-01	POWER BUTTON	
53		4-202-964-11	SPRING	
54		4-205-698-01	GUIDE, LIGHT	
55		A-1610-075-A	DOOR ASSY	56-59
56		3-022-410-01	DAMPER	
57		4-047-464-01	CATCHER, PUSH	
58		4-205-743-01	SPRING, TORSION	
59		4-205-695-01	DOOR BRACKET	
61		4-203-128-41	SHEET, BLOTTING	
62	⚠	1-451-481-11	DEFLECTION YOKE	(Y28RVC2)
63		1-419-363-11	COIL, NA ROTATION	
64	⚠	8-453-011-11	NECK ASSY, (NA299-M)	
65		*A-1644-108-A	VM BOARD, COMPLETE	
66		*A-1638-139-A	C BOARD, COMPLETE	
67		4-200-433-01	SPRING, EXTENSION	
68	⚠	1-416-466-11	COIL, DEMAGNETIC	
69		*4-203-390-51	CUSHION, DGC	
70		*4-057-303-01	HOLDER, DGC	
71		4-202-554-01	HOLDER, HV CABLE	
72	⚠	1-251-317-63	CAP ASSY, HIGH-VOLTAGE	
73		4-203-658-01	SPACER, DY	
74	⚠	8-737-786-05	PICTURE TUBE (W66LLX060X)	
75		4-036-188-01	SCREW, TAPPING	
76		4-308-870-00	CLIP, LEAD WIRE	
77		1-452-094-00	MAGNET, ROTATABLE DISK; 15MM	
78		1-452-032-00	MAGNET, DISK; 10MM	
79		X-4387-214-1	PERMALLOY ASSY, CORRECTION	
80		3-701-007-00	BAND, BINDING	

6-3. CHASSIS KV 32FX65B/32FX65E/32FX65K

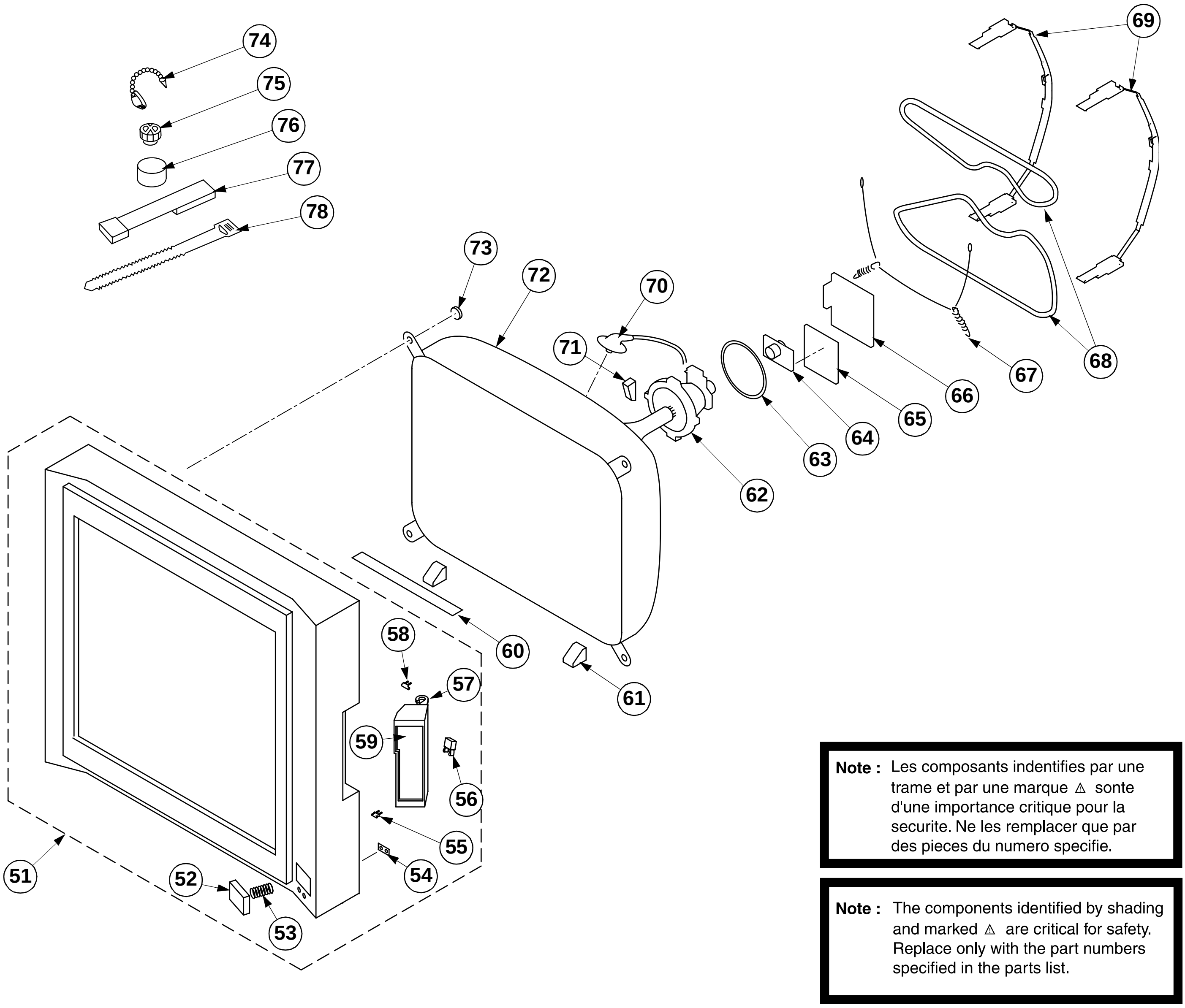


Note : Les composants indentifies par une trame et par une marque ⚠ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

REF. NO.		PART.NO	DESCRIPTION	REMARK
1		*A-1646-218-A	H7 BOARD, COMPLETE	
2		*4-205-724-01	F4, H7 BRACKET	
3		*A-1646-217-A	H8 BOARD, COMPLETE	
4	⚠	1-571-433-21	SWITCH, PUSH (AC POWER)	
5		*A-1624-089-A	F4 BOARD, COMPLETE	
6		*4-205-196-02	MAIN BRACKET	
7		*A-1640-399-A	D BOARD, COMPLETE	
8	⚠	1-453-340-21	TRANSFORMER ASSY, FLYBACK (NX4522//U214)	
9		*4-204-476-04	BRACKET, J1	
10		*A-1651-137-A	J BOARD, COMPLETE	
11		*A-1640-322-A	D1 BOARD, COMPLETE	
12		*A-1640-381-A	E BOARD, COMPLETE	
13		*A-1620-133-A	B1 BOARD, COMPLETE	
14		*4-204-477-04	BRACKET, J2	
15		1-790-082-11	CABLE, RF	
16	⚠	1-792-389-11	CORD, POWER	
17		1-693-340-11	TUNER/VIF(FR) (KV-32FX65B)	
		1-693-338-11	TUNER/VIF(AEP) (KV-32FX65E/32FX65K)	
18		*A-1624-086-A	F1 BOARD, COMPLETE	
19		*A-1634-057-A	M1 BOARD, COMPLETE	
20		*A-1632-916-A	A BOARD, COMPLETE (KV-32FX65B)	
		*A-1632-917-A	A BOARD, COMPLETE (KV-32FX65E/32FX65K)	
21		1-529-899-11	SPEAKER (24X4.2CM)	
22		*A-1678-191-A	WOOFER ASSY (SP) 23-26	
23		*4-204-775-01	BAFFLE, WOOFER	
24		1-529-417-11	SPEAKER (8CM)	
25		7-685-663-71	SCREW +BVTP 4X16 TYPE 2 IT-3	
26		*4-204-776-01	BOX, WOOFER	
27		4-205-540-01	REAR COVER	
28		7-685-663-79	SCREW +BVTP 4X16 TYPE 2 IT-3	

6-4. PICTURE TUBE KV-32FX65B/32FX65E/32FX65K

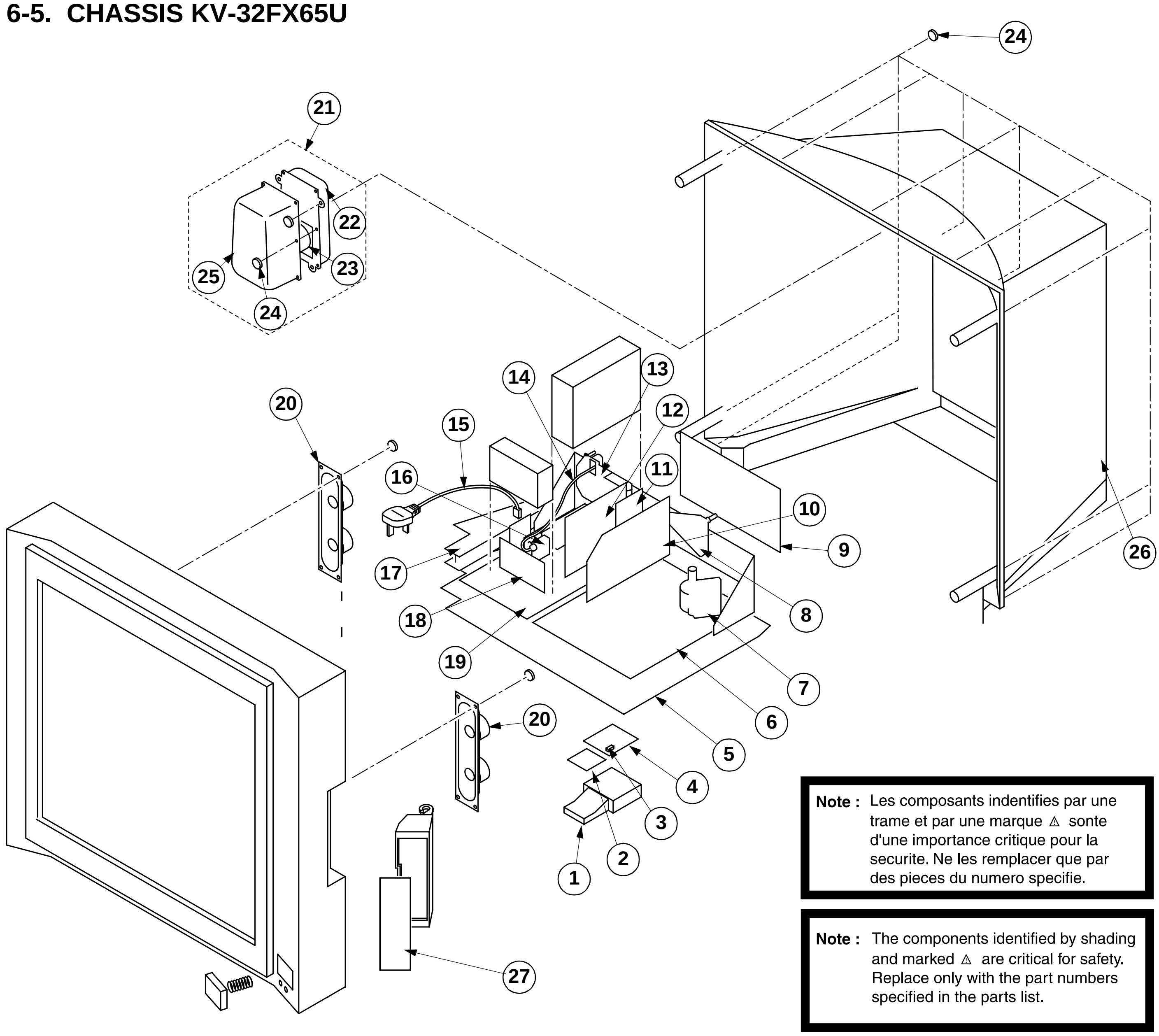


Note : Les composants indentifies par une trame et par une marque ⚠ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

REF. NO.		PART.NO	DESCRIPTION	REMARK
51		X-4200-640-1	BEZNET ASSY	52-59
52		4-205-720-01	POWER BUTTON	
53		4-204-426-01	SPRING	
54		4-205-726-01	GUIDE, LIGHT	
55		3-022-410-01	DAMPER	
56		4-047-464-01	CATCHER, PUSH	
57		4-205-723-01	DOOR BRACKET	
58		4-205-725-01	DOOR SPRING	
59		4-205-722-01	DOOR	
60		4-204-058-31	SHEET, BLOTTING	
61		*4-203-098-01	SUPPORTER, CRT	
62	⚠	1-451-480-11	DEFLECTION YOKE	(Y32RVC2)
63		1-419-363-11	COIL, NA ROTATION	
64	⚠	8-453-011-11	NECK ASSY, (NA299-M)	
65		*A-1644-108-A	VM BOARD, COMPLETE	
66		*A-1638-139-A	C BOARD, COMPLETE	
67		4-369-318-21	SPRING, TENSION	
68	⚠	1-416-769-11	COIL, DEMAGNETIC	
69		*4-204-768-01	HOLDER, DGC (29")	
70	⚠	1-251-317-63	CAP ASSY, HIGH-VOLTAGE	
71		3-704-495-01	SPACER, DY	
72	⚠	8-735-054-05	PICTURE TUBE (W76LLZ060X)	
73		4-046-765-12	SCREW, TAPPING 7+CROWN WASHER	
74		4-308-870-00	CLIP, LEAD WIRE	
75		1-452-094-00	MAGNET, ROTATABLE DISK; 15MM	
76		1-452-032-00	MAGNET, DISK; 10MM	
77		X-4387-214-1	PERMALLOY ASSY, CORRECTION	
78		3-701-007-00	BAND, BINDING	

6-5. CHASSIS KV-32FX65U

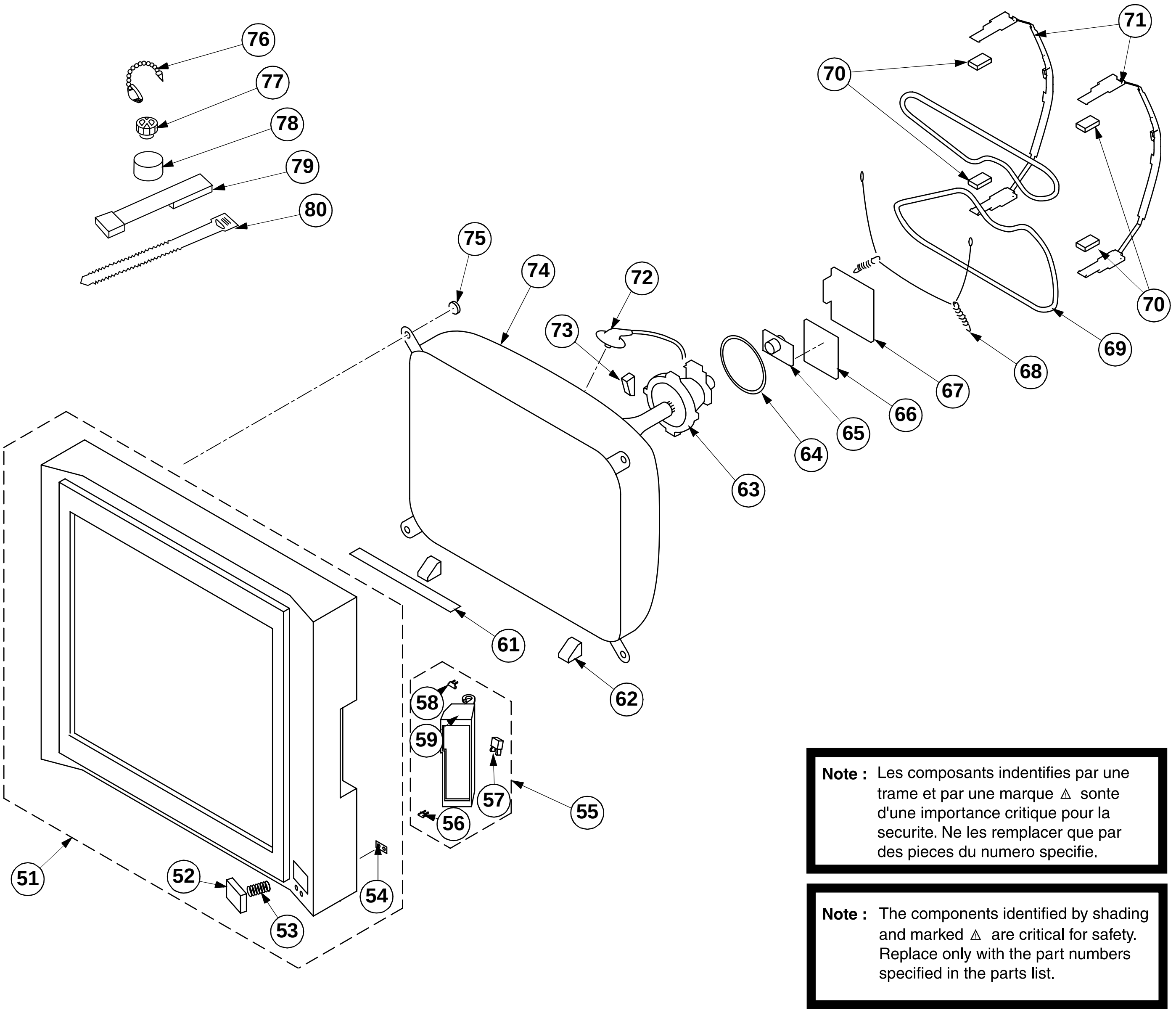


Note : Les composants indentifies par une trame et par une marque ⚠ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

REF. NO.		PART.NO	DESCRIPTION	REMARK
1		*4-205-697-01	H/F BRACKET	
2		*A-1646-229-A	H8 BOARD, COMPLETE	
3	⚠	1-571-433-21	SWITCH, PUSH (AC POWER)	
4		*A-1624-091-A	F4 BOARD, COMPLETE	
5		*4-205-196-22	MAIN BRACKET	
6		*A-1640-323-A	D BOARD, COMPLETE	
7	⚠	1-453-340-21	TRANSFORMER ASSY, FLYBACK (NX4522//U214)	
8		*4-204-476-04	BRACKET, J1	
9		*A-1651-142-A	J BOARD, COMPLETE	
10		*A-1640-385-A	D1 BOARD, COMPLETE	
11		*A-1640-384-A	E BOARD, COMPLETE	
12		*A-1620-112-A	B1 BOARD, COMPLETE	
13		*4-204-477-04	BRACKET, J2	
14		1-790-082-11	CABLE, RF	
15	⚠	1-792-592-11	CORD, PLUG WITH POWER	
16		1-693-339-11	TUNER/VIF(UK)	
17		*A-1624-086-A	F1 BOARD, COMPLETE	
18		*A-1634-060-A	M1 BOARD, COMPLETE	
19		*A-1631-127-A	A BOARD, COMPLETE	
20		1-529-899-11	SPEAKER (24X4.2CM)	
21		*A-1678-192-A	WOOFER ASSY (SP)	22-25
22		*4-204-775-21	BAFFLE, WOOFER	
23		1-529-417-11	SPEAKER (8CM)	
24		4-039-358-01	SCREW (4X16), (+) BV TAPPING	
25		*4-204-776-21	BOX, WOOFER	
26		4-205-736-11	REAR COVER	
27		*A-1646-220-A	H7 BOARD, COMPLETE	

6-6. PICTURE TUBE KV-32FX65U



Note : Les composants indentifies par une trame et par une marque ⚠ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

REF. NO.		PART.NO	DESCRIPTION	REMARK
51		X-4200-641-2	BEZNET ASSY	52-54
52		4-205-699-01	POWER BUTTON	
53		4-202-964-11	SPRING	
54		4-205-698-01	GUIDE, LIGHT	
55		A-1610-075-A	DOOR ASSY	56-59
56		3-022-410-01	DAMPER	
57		4-047-464-01	CATCHER, PUSH	
58		4-205-743-01	SPRING, TORSION	
59		4-205-695-01	DOOR BRACKET	
61		4-203-128-31	SHEET, BLOTTING	
62		*4-203-098-01	SUPPORTER, CRT	
63	⚠	1-451-480-11	DEFLECTION YOKE	(Y32RVC2)
64		1-419-363-11	COIL, NA ROTATION	
65	⚠	8-453-011-11	NECK ASSY, (NA299-M)	
66		*A-1644-108-A	VM BOARD, COMPLETE	
67		*A-1638-139-A	C BOARD, COMPLETE	
68		4-200-433-01	SPRING, EXTENSION	
69	⚠	1-416-769-11	COIL, DEMAGNETIC	
70		*4-203-390-41	CUSHION, DGC	
71		*4-059-569-01	HOLDER, DGC	
72	⚠	1-251-317-63	CAP ASSY, HIGH-VOLTAGE	
73		4-203-658-01	SPACER, DY	
74	⚠	8-735-054-05	PICTURE TUBE (W76LLZ060X)	
75		4-204-225-01	PT SCREW	
76		4-308-870-00	CLIP, LEAD WIRE	
77		1-452-094-00	MAGNET, ROTATABLE DISK; 15MM	
78		1-452-032-00	MAGNET, DISK; 10MM	
79		X-4387-214-1	PERMALLOY ASSY, CORRECTION	
80		3-701-007-00	BAND, BINDING	

SECTION 7
ELECTRICAL PARTS LIST

PARTS LISTING TABLE OF CONTENTS

Page

H7 BOARD COMPLETE Parts List : 99
B1 BOARD COMPLETE Parts List : 99
F1 BOARD COMPLETE Parts List : 101
F4 BOARD COMPLETE Parts List : 102
A BOARD COMMON Parts List : 102
A BOARD VARIANT Parts List : Parts that belong only to the model specified
Model
KV-28FX65 104
KV-32FX65 105
M1 BOARD COMMON Parts List : 105
M1 BOARD VARIANT Parts List : Parts that belong only to the model specified
Model
KV-28FX65 107
KV-32FX65 107
C BOARD COMMON Parts List : Parts common to all models listed in this manual 107
D BOARD COMMON Parts List : 109
D BOARD VARIANT Parts List : Parts that belong only to the model specified
Model
KV-28FX65 113
KV-32FX65 113
D1 BOARD COMMON Parts List : Parts common to all models listed in this manual 114
D1 BOARD VARIANT Parts List : Parts that belong only to the model specified
Model
KV-28FX65 118
KV-32FX65 118
E BOARD COMMON Parts List : Parts common to all models listed in this manual 119
E BOARD VARIANT Parts List : Parts that belong only to the model specified
Model
KV-28FX65 121
KV-32FX65 121
H8 BOARD COMMON Parts List : Parts common to all models listed in this manual 121
H8 BOARD VARIANT Parts List : Parts that belong only to the model specified
Model
KV-28FX65 121
KV-32FX65 122
J BOARD COMMON Parts List : Parts common to all models listed in this manual 122
J BOARD VARIANT Parts List : Parts that belong only to the model specified
Model
KV-28FX65 127
KV-32FX65 127
VM BOARD COMPLETE Parts List : 127
MISCELLANEOUS : 129
ACCESSORIES AND PACKAGING MATERIALS : 129

Note : Refer to the designated variant parts list when seeking a part indicated by an asterisk (*)
Parts indicated (#) on the Schematic Diagram are not used in this model and
therefore do not appear in the Parts List.

*A-1646-220-A H7 Board, Complete (KV-28FX65/32FX65U)
*A-1646-218-A H7 Board, Complete (KV-32FX65B/32FX65E/32FX65K)

< CAPACITOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
C7900	1-101-810-00	CERAMIC 100PF	5.00% 500V
C7901	1-101-810-00	CERAMIC 100PF	5.00% 500V
C7903	1-535-143-61	LEAD,JUMPER (5.0MM)	
C7904	1-535-143-61	LEAD,JUMPER (5.0MM)	
C7925	1-137-372-11	MYLAR 0.022UF	5.00% 50V
C7926	1-137-372-11	MYLAR 0.022UF	5.00% 50V

< CONNECTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
CN7902	*1-564-518-11	PLUG, CONNECTOR 3P	
CN7904	*1-564-526-11	PLUG, CONNECTOR 11P	

< SOCKET >

REF. NO.	PART.NO	DESCRIPTION	REMARK
J7900	1-779-947-11	TERMINAL BLOCK, S	
J7925	1-785-448-11	JACK	

< COIL >

REF. NO.	PART.NO	DESCRIPTION	REMARK
L7901	1-535-143-61	LEAD, JUMPER (5.0MM)	
L7902	1-535-143-61	LEAD, JUMPER (5.0MM)	
L7925	1-414-183-41	INDUCTOR 10UH	
L7926	1-414-183-41	INDUCTOR 10UH	

< RESISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
R7901	1-249-417-11	CARBON 1K	5% 1/4W
R7902	1-247-895-91	CARBON 470K	5% 1/4W
R7903	1-247-895-91	CARBON 470K	5% 1/4W
R7905	1-249-417-11	CARBON 1K	5% 1/4W
R7910	1-249-429-11	CARBON 10K	5% 1/4W
R7911	1-249-425-11	CARBON 4.7K	5% 1/4W
R7912	1-249-429-11	CARBON 10K	5% 1/4W
R7913	1-249-421-11	CARBON 2.2K	5% 1/4W
R7914	1-249-421-11	CARBON 2.2K	5% 1/4W
R7915	1-249-425-11	CARBON 4.7K	5% 1/4W

< SWITCH >

REF. NO.	PART.NO	DESCRIPTION	REMARK
S7900	1-771-947-11	SWITCH, TACTILE	
S7901	1-771-947-11	SWITCH, TACTILE	
S7902	1-771-947-11	SWITCH, TACTILE	

*A-1620-112-A B1 Board, Complete (KV-28FX65/32FX65U)
*A-1620-133-A B1 Board, Complete (KV-32FX65B/32FX65E/32FX65K)

< CAPACITOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
C2301	1-126-934-11	ELECT 220UF	20.00% 16V
C2302	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2303	1-126-964-11	ELECT 10UF	20.00% 50V
C2304	1-163-259-91	CERAMIC CHIP 220PF	5.00% 50V
C2305	1-163-259-91	CERAMIC CHIP 220PF	5.00% 50V
C2306	1-163-259-91	CERAMIC CHIP 220PF	5.00% 50V
C2307	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2308	1-163-259-91	CERAMIC CHIP 220PF	5.00% 50V
C2309	1-126-934-11	ELECT 220UF	20.00% 16V
C2311	1-126-963-11	ELECT 4.7UF	20.00% 50V
C2312	1-126-963-11	ELECT 4.7UF	20.00% 50V
C2313	1-126-963-11	ELECT 4.7UF	20.00% 50V
C2314	1-163-275-11	CERAMIC CHIP 0.001UF	5.00% 50V
C2315	1-164-489-11	CERAMIC CHIP 0.22UF	10.00% 16V
C2316	1-110-501-11	CERAMIC CHIP 0.33UF	10.00% 16V
C2317	1-162-638-11	CERAMIC CHIP 1UF	16V
C2318	1-163-989-11	CERAMIC CHIP 0.033UF	10.00% 25V
C2319	1-163-989-11	CERAMIC CHIP 0.033UF	10.00% 25V
C2320	1-164-489-11	CERAMIC CHIP 0.22UF	10.00% 16V
C2323	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
C2324	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2325	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2327	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2328	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2329	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2330	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2331	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2332	1-163-239-11	CERAMIC CHIP 33PF	5.00% 50V
C2333	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2334	1-126-964-11	ELECT 10UF	20.00% 50V
C2335	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2337	1-163-259-91	CERAMIC CHIP 220PF	5.00% 50V
C2338	1-126-934-11	ELECT 220UF	20.00% 16V
C2339	1-164-005-11	CERAMIC CHIP 0.47UF	25V
C2340	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2342	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2343	1-126-961-11	ELECT 2.2UF	20.00% 50V
C2344	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2345	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2346	1-126-964-11	ELECT 10UF	20.00% 50V
C2347	1-163-231-11	CERAMIC CHIP 15PF	5.00% 50V

B1

REF. NO.	PART.NO	DESCRIPTION	REMARK
C2348	1-163-231-11	CERAMIC CHIP 15PF	5.00% 50V
C2349	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2350	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2351	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2354	1-126-934-11	ELECT 220UF	20.00% 16V
C2356	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2357	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2358	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2361	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2362	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2363	1-126-934-11	ELECT 220UF	20.00% 16V
C2364	1-163-239-11	CERAMIC CHIP 33PF	5.00% 50V
C2366	1-163-239-11	CERAMIC CHIP 33PF	5.00% 50V
C2367	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2368	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2371	1-163-239-11	CERAMIC CHIP 33PF	5.00% 50V
C2372	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2374	1-163-239-11	CERAMIC CHIP 33PF	5.00% 50V
C2377	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2378	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2380	1-163-145-00	CERAMIC CHIP 0.0015UF	5.00% 50V
C2381	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2382	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2383	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2385	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2387	1-136-250-11	FILM 0.001UF	2.00% 100V
C2388	1-136-479-11	FILM 0.001UF	1.00% 100V
C2389	1-163-085-00	CERAMIC CHIP 2PF	0.25PF 50V
C2390	1-163-243-11	CERAMIC CHIP 47PF	5.00% 50V
C2391	1-163-243-11	CERAMIC CHIP 47PF	5.00% 50V
C2704	1-126-934-11	ELECT 220UF	20.00% 16V
C2705	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V

< CONNECTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
CN2100	1-695-301-11	CONNECTOR, BOARD TO BOARD 40P	

< FILTER >

REF. NO.	PART.NO	DESCRIPTION	REMARK
FL2300	1-236-071-11	ENCAPSULATED COMPONENT	
FL2301	1-233-767-21	FILTER	
FL2302	1-236-071-11	ENCAPSULATED COMPONENT	
FL2303	1-236-071-11	ENCAPSULATED COMPONENT	
FL2308	1-233-736-21	FILTER, EMI	

< IC >

REF. NO.	PART.NO	DESCRIPTION	REMARK
IC2300	8-759-991-41	IC L78L05ACZ-AP	
IC2301	8-759-669-75	IC TLC2932IPW-E20	
IC2302	8-759-257-59	IC TDA8755T-T	
IC2303	8-759-438-64	IC SAA4952WP/V1	
IC2304	8-759-546-02	IC SAA4995WP-V1-T3	
IC2305	8-759-669-75	IC TLC2932IPW-E20	
IC2307	8-759-546-04	IC SAA4991WP-V1-T3	
IC2308	8-759-572-55	IC P83C654EBA/585	
IC2310	8-759-991-41	IC L78L05ACZ-AP	
IC2311	8-759-467-19	IC SDA9280B22	
IC2312	8-759-576-71	IC MSM5412222A-30JS-DR1	
IC2313	8-759-576-71	IC MSM5412222A-30JS-DR1	
IC2314	8-759-439-26	IC SN74LS221D	

< COIL >

REF. NO.	PART.NO	DESCRIPTION	REMARK
L2300	1-408-597-21	INDUCTOR 3.3UH	
L2301	1-410-435-21	INDUCTOR 220UH	
L2302	1-410-435-21	INDUCTOR 220UH	
L2303	1-408-597-21	INDUCTOR 3.3UH	
L2304	1-414-186-31	INDUCTOR 33UH	
L2305	1-408-603-31	INDUCTOR 10UH	
L2306	1-414-186-31	INDUCTOR 33UH	
L2307	1-414-384-11	INDUCTOR 5.6UH	

< TRANSISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
Q2301	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q2302	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q2303	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q2304	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q2305	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q2306	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q2307	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	

< RESISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
R2300	1-216-051-00	RES-CHIP 1.2K 5%	1/10W
R2301	1-216-053-00	RES-CHIP 1.5K 5%	1/10W
R2302	1-216-067-00	RES-CHIP 5.6K 5%	1/10W
R2303	1-216-059-00	RES-CHIP 2.7K 5%	1/10W
R2304	1-216-051-00	RES-CHIP 1.2K 5%	1/10W
R2305	1-216-065-91	RES-CHIP 4.7K 5%	1/10W
R2306	1-216-295-11	SHORT 0	
R2307	1-216-049-11	RES-CHIP 1K 5%	1/10W
R2310	1-216-049-11	RES-CHIP 1K 5%	1/10W
R2312	1-216-049-11	RES-CHIP 1K 5%	1/10W
R2313	1-216-047-91	RES-CHIP 820 5%	1/10W
R2314	1-216-063-91	RES-CHIP 3.9K 5%	1/10W
R2315	1-216-121-11	RES-CHIP 1M 5%	1/10W
R2316	1-216-073-00	RES-CHIP 10K 5%	1/10W
R2317	1-216-025-11	RES-CHIP 100 5%	1/10W
R2320	1-216-295-11	SHORT 0	

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

REF. NO.	PART.NO	DESCRIPTION			REMARK
R2321	1-216-295-11	SHORT	0		
R2337	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2338	1-216-295-11	SHORT	0		
R2341	1-216-295-11	SHORT	0		
R2345	1-216-025-11	RES-CHIP	100	5%	1/10W
R2348	1-216-089-11	RES-CHIP	47K	5%	1/10W
R2355	1-216-295-11	SHORT	0		
R2356	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R2358	1-216-295-11	SHORT	0		
R2359	1-216-001-00	RES-CHIP	10	5%	1/10W
R2360	1-216-085-00	RES-CHIP	33K	5%	1/10W
R2361	1-216-085-00	RES-CHIP	33K	5%	1/10W
R2362	1-216-025-11	RES-CHIP	100	5%	1/10W
R2363	1-216-025-11	RES-CHIP	100	5%	1/10W
R2364	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2365	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2366	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2367	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2368	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2369	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2370	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2371	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2372	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2373	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R2374	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2375	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2376	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2377	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2378	1-216-029-00	RES-CHIP	150	5%	1/10W
R2379	1-216-076-00	RES-CHIP	13K	5%	1/10W
R2380	1-216-073-00	RES-CHIP	10K	5%	1/10W
R2381	1-216-021-00	RES-CHIP	68	5%	1/10W
R2382	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2383	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2384	1-216-021-00	RES-CHIP	68	5%	1/10W
R2385	1-216-037-00	RES-CHIP	330	5%	1/10W
R2386	1-216-295-11	SHORT	0		
R2387	1-216-027-00	RES-CHIP	120	5%	1/10W
R2388	1-216-037-00	RES-CHIP	330	5%	1/10W
R2389	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R2390	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2391	1-216-025-11	RES-CHIP	100	5%	1/10W
R2392	1-216-295-11	SHORT	0		
R2393	1-216-025-11	RES-CHIP	100	5%	1/10W
R2394	1-216-025-11	RES-CHIP	100	5%	1/10W
R2395	1-216-295-11	SHORT	0		
R2400	1-216-295-11	SHORT	0		

REF. NO.	PART.NO	DESCRIPTION			REMARK
R2403	1-216-295-11	SHORT	0		
R2404	1-216-295-11	SHORT	0		
R2410	1-216-037-00	RES-CHIP	330	5%	1/10W
R2411	1-216-037-00	RES-CHIP	330	5%	1/10W
R2412	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R2413	1-216-664-11	METAL CHIP	3.6K	0.5%	1/10W
R2415	1-216-295-11	SHORT	0		
R2701	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2702	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2703	1-216-025-11	RES-CHIP	100	5%	1/10W
R2704	1-216-025-11	RES-CHIP	100	5%	1/10W
R2705	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2706	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2711	1-216-001-00	RES-CHIP	10	5%	1/10W
R2713	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2714	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2715	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2716	1-216-025-11	RES-CHIP	100	5%	1/10W
R2717	1-216-295-11	SHORT	0		
R2718	1-216-295-11	SHORT	0		
R2719	1-216-295-11	SHORT	0		
R2720	1-216-295-11	SHORT	0		
R2721	1-216-295-11	SHORT	0		
R2722	1-216-295-11	SHORT	0		
R2723	1-216-027-00	RES-CHIP	120	5%	1/10W
R2724	1-216-295-11	SHORT	0		
R2725	1-216-009-91	RES-CHIP	22	5%	1/10W
R2726	1-216-295-11	SHORT	0		
R2727	1-216-295-11	SHORT	0		
R2728	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2734	1-216-295-11	SHORT	0		
R2735	1-216-021-00	RES-CHIP	68	5%	1/10W
R2736	1-216-295-11	SHORT	0		
R2738	1-216-025-11	RES-CHIP	100	5%	1/10W

< CRYSTAL >

X2300	1-579-175-11	VIBRATOR, CERAMIC			

*A-1624-086-A F1 Board, Complete

	*4-374-846-01	COVER, CAPACITOR, CAP TYPE			

< CAPACITOR >

C7626 ⚠	1-136-527-12	FILM	0.47UF	20.00%	300V

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

REF. NO.	PART.NO	DESCRIPTION	REMARK
		< CONNECTOR >	
CN7611	⚠ *1-580-843-11	PIN, CONNECTOR (POWER)	
CN7622	1-695-915-11	TAB (CONTACT)	
CN7633	⚠ *1-580-843-11	PIN, CONNECTOR (POWER)	
CN7655	1-695-915-11	TAB (CONTACT)	
		< FUSE >	
F7626	⚠ 1-576-232-11	FUSE (H.B.C.) 5A/250V	
	⚠ 1-533-725-11	HOLDER, FUSE (F7626)	
		< RESISTOR >	
R7626	⚠ 1-202-719-00	SOLID 1M 20% 1/2W	
R7627	⚠ 1-220-797-11	CEMENTED 0.47 5% 10W	
		< TRANSFORMER >	
LF7627	⚠ 1-433-488-11	TRANSFORMER, LINE FILTER	
		< VARISTOR >	
VD7626	⚠ 1-803-830-11	VARISTOR (ERZV14D621)	

***A-1624-091-A F4 Board, Complete (KV-28FX65/32FX65U)**
***A-1624-089-A F4 Board, Complete (KV-32FX65B/32FX65E/32FX65K)**

REF. NO.	PART.NO	DESCRIPTION	REMARK
		< CONNECTOR >	
CN7601	⚠ *1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P	
CN7602	⚠ *1-580-843-11	PIN, CONNECTOR (POWER)	
		< SWITCH >	
S7601	⚠ 1-571-433-21	SWITCH, PUSH (AC POWER)	

***A-1631-128-A A Board, Complete (KV-28FX65B)**
***A-1631-126-A A Board, Complete (KV-28FX65E)**
***A-1631-127-A A Board, Complete (KV-28FX65U/32FX65U)**
***A-1632-916-A A Board, Complete (KV-32FX65B)**
***A-1632-917-A A Board, Complete (KV-32FX65E/32FX65K)**

A Board, Common Parts

REF. NO.	PART.NO	DESCRIPTION	REMARK
	4-382-854-11	SCREW (M3X10), P, SW (+)	

REF. NO.	PART.NO	DESCRIPTION	REMARK
		< CAPACITOR >	
C1100	1-104-664-11	ELECT 47UF	20.00% 25V
C1101	1-126-943-11	ELECT 2200UF	20.00% 25V
C1126	1-162-568-11	CERAMIC CHIP 0.33UF	10.00% 16V
C1127	1-136-175-00	FILM 0.68UF	5.00% 50V
C1128	1-163-135-00	CERAMIC CHIP 560PF	5.00% 50V
C1129	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
C1130	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C1131	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C1132	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
C1133	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C1134	1-126-961-11	ELECT 2.2UF	20.00% 50V
C1135	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C1136	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C1137	1-126-953-11	ELECT 2200UF	20.00% 35V
C1138	1-126-953-11	ELECT 2200UF	20.00% 35V
C1140	1-111-216-91	ELECT 150UF	20.00% 63V
C1141	1-164-505-11	CERAMIC CHIP 2.2UF	16V
C1142	1-130-777-00	MYLAR 0.1UF	5.00% 63V
C1151	1-162-568-11	CERAMIC CHIP 0.33UF	10.00% 16V
C1152	1-136-175-00	FILM 0.68UF	5.00% 50V
C1153	1-163-135-00	CERAMIC CHIP 560PF	5.00% 50V
C1154	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
C1155	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C1156	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C1157	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
C1158	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C1159	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C1160	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C1162	1-111-216-91	ELECT 150UF	20.00% 63V
C1163	1-164-505-11	CERAMIC CHIP 2.2UF	16V
C1164	1-130-777-00	MYLAR 0.1UF	5.00% 63V
C1177	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C1178	1-126-964-11	ELECT 10UF	20.00% 50V
C1179	1-126-965-11	ELECT 22UF	20.00% 50V
C1180	1-126-952-11	ELECT 1000UF	20.00% 35V
C1181	1-126-952-11	ELECT 1000UF	20.00% 35V
C1182	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C1183	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C1184	1-107-823-11	CERAMIC CHIP 0.47UF	10.00% 16V
C1226	1-104-661-91	ELECT 330UF	20.00% 16V
C1227	1-164-505-11	CERAMIC CHIP 2.2UF	16V
C1326	1-163-059-91	CERAMIC CHIP 0.01UF	10.00% 50V
C1327	1-126-934-11	ELECT 220UF	20.00% 10V
C1328	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C1601	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V

A

REF. NO.	PART.NO	DESCRIPTION	REMARK
C1602	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C1603	1-126-933-11	ELECT 100UF	20.00% 16V
C1604	1-126-933-11	ELECT 100UF	20.00% 16V
C1605	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C1607	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C1608	1-126-934-11	ELECT 220UF	20.00% 16V
C1610	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C1611	1-126-933-11	ELECT 100UF	20.00% 16V
C1615	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
	< CONNECTOR >		
CN1111	*1-564-520-11	PLUG, CONNECTOR 5P	
CN1200	1-695-298-11	CONNECTOR, BOARD TO BOARD 40P	
CN1401	1-695-298-11	CONNECTOR, BOARD TO BOARD 40P	
CN1600	1-900-903-64	CONNECTOR ASSY 20P	
CN1601	1-900-903-64	CONNECTOR ASSY 20P	
CN1602	1-900-903-64	CONNECTOR ASSY 20P	
CN1700	*1-564-507-11	PLUG, CONNECTOR 4P	
CN1702	*1-564-506-11	PLUG, CONNECTOR 3P	
CN1703	1-764-334-11	PLUG, CONNECTOR 11P	
CN1801	1-695-299-11	CONNECTOR, BOARD TO BOARD 50P	
CN1811	1-695-915-11	TAB (CONTACT)	
CN1901	1-695-298-11	CONNECTOR, BOARD TO BOARD 40P	
CN1902	*1-564-507-11	PLUG, CONNECTOR 4P	
CN1988	*1-568-879-11	PIN, CONNECTOR 4P	
	< DIODE >		
D1100	8-719-914-43	DIODE DAN202K-T-146	
D1101	8-719-914-44	DIODE DAP202K-T-146	
D1102	8-719-914-43	DIODE DAN202K-T-146	
D1103	8-719-914-43	DIODE DAN202K-T-146	
D1104	8-719-914-43	DIODE DAN202K-T-146	
D1201	8-719-976-96	DIODE UDZ-TE-17-4.7B	
D1401	8-719-056-82	DIODE UDZ-TE-17-6.2B	
D1402	8-719-056-82	DIODE UDZ-TE-17-6.2B	
D1405	8-719-914-44	DIODE DAP202K-T-146	
D1406	8-719-914-44	DIODE DAP202K-T-146	
D1407	8-719-069-55	DIODE UDZS-TE17-5.6B	
D1408	8-719-069-55	DIODE UDZS-TE17-5.6B	
D1626	8-719-914-43	DIODE DAN202K-T-146	
D1627	8-719-914-43	DIODE DAN202K-T-146	
D1629	8-719-914-43	DIODE DAN202K-T-146	
	< FERRITE BEAD >		
FB1126	1-410-397-21	FERRITE 1.1UH	
FB1127	1-410-397-21	FERRITE 1.1UH	
FB1151	1-410-397-21	FERRITE 1.1UH	
FB1152	1-410-397-21	FERRITE 1.1UH	

REF. NO.	PART.NO	DESCRIPTION	REMARK
FB1901	1-414-553-11	FERRITE 0UH	
FB1903	1-414-553-11	FERRITE 0UH	
FB1904	1-414-553-11	FERRITE 0UH	
FB1905	1-414-553-11	FERRITE 0UH	
FB1906	1-414-553-11	FERRITE 0UH	
FB1907	1-414-553-11	FERRITE 0UH	
	< IC >		
IC1126	8-759-544-25	IC TDA7482	
IC1151	8-759-544-25	IC TDA7482	
IC1176	8-759-333-24	IC LM1876TF	
IC1400	8-752-072-94	IC CXA1875AM-T4	
	< COIL >		
L1126	1-416-857-11	INDUCTOR 65UH	
L1127	1-414-158-11	INDUCTOR 2.2UH	
L1128	1-414-158-11	INDUCTOR 2.2UH	
L1151	1-416-857-11	INDUCTOR 65UH	
L1152	1-414-158-11	INDUCTOR 2.2UH	
L1153	1-414-158-11	INDUCTOR 2.2UH	
L1326	1-414-183-41	INDUCTOR 10UH	
	< TRANSISTOR >		
Q1100	8-729-026-49	TRANSISTOR 2SA1037AK-T-146-R	
Q1101	8-729-026-49	TRANSISTOR 2SA1037AK-T-146-R	
Q1201	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q1202	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q1204	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q1226	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q1227	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q1229	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q1326	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q1327	8-729-026-49	TRANSISTOR 2SA1037AK-T-146-R	
Q1328	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q1329	8-729-026-49	TRANSISTOR 2SA1037AK-T-146-R	
Q1601	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q1626	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
	< RESISTOR >		
JR1203	1-216-296-91	SHORT 0	
JR1204	8-719-421-57	MA73-TX	
JR1601	1-216-296-91	SHORT 0	
R1001	1-216-295-11	SHORT 0	
R1002	1-216-295-11	SHORT 0	
R1003	1-216-295-11	SHORT 0	
R1004	1-216-295-11	SHORT 0	
R1005	1-216-295-11	SHORT 0	

REF. NO.	PART.NO	DESCRIPTION	REMARK
R1006	1-216-295-11	SHORT 0	
R1100	1-216-025-11	RES-CHIP 100 5% 1/10W	
R1101	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R1103	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R1104	1-216-296-91	SHORT 0	
R1126	1-208-762-11	RES-CHIP 150 0.5% 1/10W	
R1127	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R1128	1-216-041-00	RES-CHIP 470 5% 1/10W	
R1151	1-208-762-11	METAL CHIP 150 0.5% 1/10W	
R1152	1-216-075-00	RES-CHIP 12K 5% 1/10W	
R1153	1-216-041-00	RES-CHIP 470 5% 1/10W	
R1176	1-216-063-91	RES-CHIP 3.9K 5% 1/10W	
R1179	1-216-357-00	METAL OXIDE 4.7 5% 1W	
R1180	1-216-081-00	RES-CHIP 22K 5% 1/10W	
R1181	1-216-045-00	RES-CHIP 680 5% 1/10W	
R1182	1-216-081-00	RES-CHIP 22K 5% 1/10W	
R1183	1-216-045-00	RES-CHIP 680 5% 1/10W	
R1184	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R1185	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R1201	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R1202	1-216-083-00	RES-CHIP 27K 5% 1/10W	
R1203	1-216-083-00	RES-CHIP 27K 5% 1/10W	
R1204	1-216-071-00	RES-CHIP 8.2K 5% 1/10W	
R1205	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R1206	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R1208	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R1209	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	
R1210	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R1227	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R1228	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R1229	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R1230	1-216-055-00	RES-CHIP 1.8K 5% 1/10W	
R1232	1-216-295-11	SHORT 0	
R1233	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R1326	1-216-025-11	RES-CHIP 100 5% 1/10W	
R1327	1-216-025-11	RES-CHIP 100 5% 1/10W	
R1328	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R1329	1-216-025-11	RES-CHIP 100 5% 1/10W	
R1330	1-216-041-00	RES-CHIP 470 5% 1/10W	
R1331	1-216-041-00	RES-CHIP 470 5% 1/10W	
R1332	1-216-041-00	RES-CHIP 470 5% 1/10W	
R1333	1-216-075-00	RES-CHIP 12K 5% 1/10W	
R1334	1-216-069-00	RES-CHIP 6.8K 5% 1/10W	
R1335	1-216-025-11	RES-CHIP 100 5% 1/10W	
R1336	1-216-041-00	RES-CHIP 470 5% 1/10W	
R1337	1-216-041-00	RES-CHIP 470 5% 1/10W	
R1338	1-216-001-00	RES-CHIP 10 5% 1/10W	
R1339	1-216-041-00	RES-CHIP 470 5% 1/10W	
R1340	1-216-043-91	RES-CHIP 560 5% 1/10W	
R1342	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R1403	1-216-295-11	SHORT 0	
R1404	1-216-295-11	SHORT 0	
R1405	1-216-025-11	RES-CHIP 100 5% 1/10W	
R1407	1-216-025-11	RES-CHIP 100 5% 1/10W	
R1408	1-216-025-11	RES-CHIP 100 5% 1/10W	
R1409	1-216-025-11	RES-CHIP 100 5% 1/10W	
R1410	1-216-025-11	RES-CHIP 100 5% 1/10W	
R1411	1-216-295-11	SHORT 0	
R1412	1-216-295-11	SHORT 0	
R1601	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R1602	1-208-822-11	METAL CHIP 47K 0.5% 1/10W	
R1603	1-216-025-11	RES-CHIP 100 5% 1/10W	
R1605	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R1609	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R1610	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	
R1616	1-216-304-11	RES-CHIP 3.3 5% 1/10W	
R1618	1-216-295-11	SHORT 0	
R1621	1-216-027-00	RES-CHIP 120 5% 1/10W	
R1622	1-216-029-00	RES-CHIP 150 5% 1/10W	
R1625	1-216-295-11	SHORT 0	

A Board Variant Parts KV-28FX65

< CAPACITOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
C1139	1-104-329-11	CERAMIC CHIP 0.1UF 10.00% 50V	(KV-28FX65B/28FX65U)

< CONNECTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
CN1666	1-695-915-11	TAB (CONTACT)	
CN1802	1-564-506-11	PLUG, CONNECTOR, 3P	(KV-28FX65B)

< IC >

REF. NO.	PART.NO	DESCRIPTION	REMARK
IC1601	8-759-574-76	IC KA78R05-SYDTU	
IC1602	8-759-574-78	IC KA278R05-YDTU	
IC1604	8-759-544-13	IC KA78R09-YDTU	
IC1605	8-759-574-75	IC KA78R33-YDTU	(KV-28FX65U)

< TUNER >

REF. NO.	PART.NO	DESCRIPTION	REMARK
TU1326	1-693-340-11	TUNER/VIF (FR)	(KV-28FX65B)
	1-693-338-11	TUNER/VIF (AEP)	(KV-28FX65E)
	1-693-339-11	TUNER/VIF (UK)	(KV-28FX65U)

A Board Variant Parts KV-32FX65

< CAPACITOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
C1139	1-104-329-11	CERAMIC CHIP 0.1UF	10.00% 50V (KV-32FX65U)
C1612	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V (KV-32FX65B/32FX65E/32FX65K)
C1613	1-126-933-11	ELECT 100UF	20.00% 16V (KV-32FX65B/32FX65E/32FX65K)
C1617	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V (KV-32FX65B/32FX65E/32FX65K)

< CONNECTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
CN1666	1-695-915-11	TAB (CONTACT)	(KV-32FX65U)
CN1802	1-564-506-11	PLUG, CONNECTOR, 3P	(KV-32FX65B/32FX65E/32FX65K)
CN1904	1-564-506-11	PLUG, CONNECTOR, 3P	(KV-32FX65B/32FX65E/32FX65K)

< IC >

REF. NO.	PART.NO	DESCRIPTION	REMARK
IC1601	8-759-069-28	IC PQ05RF11	
IC1602	8-759-574-76	IC KA278R05-SYDTU	
IC1604	8-759-054-28	IC PQ09RF11	
IC1605	8-759-069-28	IC PQ05RF11	

< RESISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
R1617	1-216-304-11	RES-CHIP 3.3 5% 1/10W	(KV-32FX65B/32FX65E/32FX65K)
R1623	1-216-033-00	RES-CHIP 220 5% 1/10W	(KV-32FX65B/32FX65E/32FX65K)

< TUNER >

REF. NO.	PART.NO	DESCRIPTION	REMARK
TU1326	1-693-340-11	TUNER/VIF (FR)	(KV-32FX65B)
	1-693-338-11	TUNER/VIF (AEP)	(KV-32FX65E/32FX65K)
	1-693-339-11	TUNER/VIF (UK)	(KV-32FX65U)

*A-1634-060-A M1 Board, Complete (KV-28FX65/32FX65U)
*A-1634-057-A M1 Board, Complete (KV-32FX65B/32FX65E/32FX65K)

M1 Board, Common Parts

< CAPACITOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
C9100	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C9101	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C9102	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C9104	1-104-664-11	ELECT 47UF	20.00% 25V
C9105	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C9110	1-165-321-11	CERAMIC CHIP 0.68UF	10.00% 16V
C9111	1-164-157-11	CERAMIC CHIP 0.068UF	10.00% 25V
C9112	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C9113	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C9114	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C9115	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C9117	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C9118	1-104-664-11	ELECT 47UF	20.00% 25V
C9119	1-163-259-91	CERAMIC CHIP 220PF	5.00% 50V
C9121	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C9122	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C9123	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C9124	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C9125	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C9126	1-163-239-11	CERAMIC CHIP 33PF	5.00% 50V
C9127	1-163-239-11	CERAMIC CHIP 33PF	5.00% 50V
C9128	1-163-239-11	CERAMIC CHIP 33PF	5.00% 50V
C9129	1-163-239-11	CERAMIC CHIP 33PF	5.00% 50V
C9130	1-163-239-11	CERAMIC CHIP 33PF	5.00% 50V
C9131	1-163-239-11	CERAMIC CHIP 33PF	5.00% 50V
C9132	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C9400	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C9500	1-104-664-11	ELECT 47UF	20.00% 25V
C9502	1-104-664-11	ELECT 47UF	20.00% 25V
C9503	1-126-964-11	ELECT 10UF	20.00% 50V
C9504	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C9505	1-104-665-11	ELECT 100UF	20.00% 25V
C9506	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C9507	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C9508	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C9509	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C9510	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C9511	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C9512	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C9513	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C9514	1-163-235-11	CERAMIC CHIP 22PF	5.00% 50V
C9515	1-163-235-11	CERAMIC CHIP 22PF	5.00% 50V
C9516	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C9517	1-163-009-11	CERAMIC CHIP 0.001UF	10.00% 50V
C9518	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C9519	1-126-964-11	ELECT 10UF	20.00% 50V
C9520	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V

< CONNECTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
CN9101	1-695-301-11	CONNECTOR, BOARD TO BOARD 40P	

M1

< DIODE >

REF. NO.	PART.NO	DESCRIPTION	REMARK
D9100	8-719-988-61	DIODE 1SS355TE-17	
D9101	8-719-988-61	DIODE 1SS355TE-17	
D9102	8-719-988-61	DIODE 1SS355TE-17	
D9103	8-719-988-61	DIODE 1SS355TE-17	
D9104	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D9105	8-719-914-43	DIODE DAN202K-T-146	
D9107	8-719-025-31	DIODE 02CZ5.6-TE85L	

< FILTER >

REF. NO.	PART.NO	DESCRIPTION	REMARK
FL9101	1-236-071-11	ENCAPSULATED COMPONENT	
FL9500	1-236-071-11	ENCAPSULATED COMPONENT	
FL9501	1-236-071-11	ENCAPSULATED COMPONENT	

< IC >

REF. NO.	PART.NO	DESCRIPTION	REMARK
IC9100	8-759-988-13	IC LM393PS-E20	
IC9104	8-759-259-18	IC MB3793-42PNF-ER	
IC9105	8-759-686-50	IC SAB-C161PI-LM	
IC9107	8-759-395-27	IC TC55257DFTL-70V-EL	
IC9108	8-759-564-06	IC M24C32-MN6T	
IC9110	8-759-559-96	IC HEF4094BT	
IC9500	8-759-188-33	IC 74F00SJX	
IC9501	8-759-666-17	IC MSM5116400D-60SJR1	
IC9502	8-759-665-84	IC SDA5275-3PC02-22	

< COIL >

REF. NO.	PART.NO	DESCRIPTION	REMARK
L9400	1-412-029-11	INDUCTOR CHIP 10UH	
L9401	1-412-029-11	INDUCTOR CHIP 10UH	

< TRANSISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
Q9100	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q9101	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q9102	8-729-902-21	TRANSISTOR 2SA1037K-T-146-R	
Q9103	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q9105	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q9106	8-729-027-46	TRANSISTOR DTC114YKA-T146	
Q9107	8-729-027-46	TRANSISTOR DTC114YKA-T146	
Q9108	8-729-027-46	TRANSISTOR DTC114YKA-T146	
Q9109	8-729-027-46	TRANSISTOR DTC114YKA-T146	
Q9110	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q9500	8-729-902-21	TRANSISTOR 2SA1037K-T-146-R	
Q9501	8-729-902-21	TRANSISTOR 2SA1037K-T-146-R	
Q9502	8-729-902-21	TRANSISTOR 2SA1037K-T-146-R	
Q9503	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q9504	1-801-806-11	TRANSISTOR DTC144EKA-T146	

< RESISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
R9100	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9101	1-216-033-00	RES-CHIP 220 5% 1/10W	
R9102	1-216-033-00	RES-CHIP 220 5% 1/10W	
R9103	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9104	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9105	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9106	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9107	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9108	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9109	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9110	1-216-081-00	RES-CHIP 22K 5% 1/10W	
R9111	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9112	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9113	1-216-033-00	RES-CHIP 220 5% 1/10W	
R9114	1-216-083-00	RES-CHIP 27K 5% 1/10W	
R9115	1-216-081-00	RES-CHIP 22K 5% 1/10W	
R9116	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9117	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9119	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9120	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9121	1-216-017-91	RES-CHIP 47 5% 1/10W	
R9122	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R9123	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9127	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R9128	1-216-097-11	RES-CHIP 100K 5% 1/10W	
R9135	1-216-295-11	SHORT 0	
R9138	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R9140	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R9141	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R9142	1-216-041-00	RES-CHIP 470 5% 1/10W	
R9143	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R9144	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R9145	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R9146	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R9147	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R9148	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9149	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9150	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9151	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9153	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9159	1-216-069-00	RES-CHIP 6.8K 5% 1/10W	
R9161	1-216-069-00	RES-CHIP 6.8K 5% 1/10W	
R9162	1-216-069-00	RES-CHIP 6.8K 5% 1/10W	
R9164	1-216-069-00	RES-CHIP 6.8K 5% 1/10W	
R9166	1-216-073-00	RES-CHIP 10K 5% 1/10W	

REF. NO.	PART.NO	DESCRIPTION	REMARK
R9168	1-216-069-00	RES-CHIP 6.8K 5% 1/10W	
R9172	1-216-069-00	RES-CHIP 6.8K 5% 1/10W	
R9173	1-216-295-11	SHORT 0	
R9174	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9175	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9176	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9177	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9178	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9179	1-216-097-11	RES-CHIP 100K 5% 1/10W	
R9184	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9185	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9186	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9187	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	
R9188	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9189	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9191	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9192	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9193	1-216-097-11	RES-CHIP 100K 5% 1/10W	
R9194	1-216-097-11	RES-CHIP 100K 5% 1/10W	
R9195	1-216-097-11	RES-CHIP 100K 5% 1/10W	
R9196	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9197	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9500	1-216-295-11	SHORT 0	
R9501	1-216-295-11	SHORT 0	
R9502	1-216-295-11	SHORT 0	
R9504	1-216-041-00	RES-CHIP 470 5% 1/10W	
R9505	1-216-051-00	RES-CHIP 1.2K 5% 1/10W	
R9506	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R9507	1-216-097-11	RES-CHIP 100K 5% 1/10W	
R9508	1-216-017-91	RES-CHIP 47 5% 1/10W	
R9509	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R9510	1-216-017-91	RES-CHIP 47 5% 1/10W	
R9511	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R9512	1-216-017-91	RES-CHIP 47 5% 1/10W	
R9513	1-216-017-91	RES-CHIP 47 5% 1/10W	
R9514	1-216-017-91	RES-CHIP 47 5% 1/10W	
R9515	1-216-295-11	SHORT 0	
R9516	1-216-295-11	SHORT 0	
R9517	1-216-295-11	SHORT 0	
R9518	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R9519	1-216-039-00	RES-CHIP 390 5% 1/10W	
R9520	1-216-039-00	RES-CHIP 390 5% 1/10W	
R9521	1-216-039-00	RES-CHIP 390 5% 1/10W	
R9522	1-216-295-11	SHORT 0	
R9523	1-216-295-11	SHORT 0	
R9524	1-216-295-11	SHORT 0	
R9525	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	

REF. NO.	PART.NO	DESCRIPTION	REMARK
R9526	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R9527	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R9528	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9529	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9530	1-216-025-11	RES-CHIP 100 5% 1/10W	
R9531	1-216-295-11	SHORT 0	

< CRYSTAL >

REF. NO.	PART.NO	DESCRIPTION	REMARK
X9101	1-781-107-21	VIBRATOR, CERAMIC	
X9500	1-760-551-21	VIBRATOR, CERAMIC	

M1 Board Variant Parts KV-28FX65

< IC >

REF. NO.	PART.NO	DESCRIPTION	REMARK
IC9109	8-759-544-32	IC M27C800-100K1	

M1 Board Variant Parts KV-32FX65

< IC >

REF. NO.	PART.NO	DESCRIPTION	REMARK
IC9109	8-759-597-95	IC M27C800-100K1-AE520	(KV-32FX65B/32FX65E/32FX65K)
	8-759-544-32	IC M27C800-100K1	(KV-32FX65U)

*A-1638-139-A C Board, Complete

REF. NO.	PART.NO	DESCRIPTION	REMARK
	4-382-854-11	SCREW (M3X10), P, SW (+)	

< CAPACITOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
C5301	1-163-075-00	CERAMIC CHIP 0.047UF 50V	
C5302	1-128-528-11	ELECT 470UF 20.00% 16V	
C5303	1-163-087-00	CERAMIC CHIP 4PF 0.25PF 50V	
C5304	1-107-967-11	ELECT 1UF 20.00% 400V	
C5305	1-136-207-11	MYLAR 0.047UF 10.00% 400V	
C5306	1-163-017-00	CERAMIC CHIP 0.0047UF 10.00% 50V	
C5307	1-163-233-11	CERAMIC CHIP 18PF 5.00% 50V	
C5308	1-163-089-00	CERAMIC CHIP 6PF 0.50PF 50V	
C5309	1-163-035-00	CERAMIC CHIP 0.047UF 50V	
C5310	1-163-113-00	CERAMIC CHIP 68PF 5.00% 50V	
C5325	1-163-087-00	CERAMIC CHIP 4PF 0.25PF 50V	
C5326	1-163-017-00	CERAMIC CHIP 0.0047UF 10.00% 50V	
C5328	1-128-528-11	ELECT 470UF 20.00% 16V	
C5329	1-107-967-11	ELECT 1UF 20.00% 400V	
C5330	1-136-207-11	MYLAR 0.047UF 10.00% 400V	
C5331	1-163-089-00	CERAMIC CHIP 6PF 0.50PF 50V	
C5332	1-163-231-11	CERAMIC CHIP 15PF 5.00% 50V	
C5333	1-163-035-00	CERAMIC CHIP 0.047UF 50V	
C5334	1-163-113-00	CERAMIC CHIP 68PF 5.00% 50V	

C

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

REF. NO.	PART.NO	DESCRIPTION	REMARK
C5350	1-107-907-11	ELECT 22UF	20.00% 50V
C5351	1-163-087-00	CERAMIC CHIP 4PF	0.25PF 50V
C5352	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C5353	1-163-075-00	CERAMIC CHIP 0.047UF	50V
C5354	1-128-528-11	ELECT 470UF	20.00% 16V
C5355	1-107-967-11	ELECT 1UF	20.00% 400V
C5356	1-136-207-11	MYLAR 0.047UF	10.00% 400V
C5357	1-163-231-11	CERAMIC CHIP 15PF	5.00% 50V
C5358	1-163-087-00	CERAMIC CHIP 4PF	0.25PF 50V
C5359	1-163-035-00	CERAMIC CHIP 0.047UF	50V
C5360	1-163-113-00	CERAMIC CHIP 68PF	5.00% 50V
C5375	1-107-902-11	ELECT 1UF	20.00% 50V
C5376	1-102-106-00	CERAMIC 100PF	10.00% 50V
C5377	1-104-331-11	CERAMIC 0.0022UF	10.00% 1KV
C5378	1-162-116-00	CERAMIC 680PF	10.00% 2KV
C5379	1-162-114-00	CERAMIC 0.0047UF	2KV
C5380	1-107-652-11	ELECT 10UF	20.00% 250V
C5381	1-117-214-11	CERAMIC 0.001UF	10.00% 2KV
C5382	1-162-114-00	CERAMIC 0.0047UF	2KV
		< CONNECTOR >	
CN5400	1-564-511-51	PLUG, CONNECTOR 8P	
CN5511	1-695-915-11	TAB (CONTACT)	
CN5600	1-508-766-00	PIN, CONNECTOR (5MM PITCH) 4P	
		< DIODE >	
D5300	8-719-911-19	DIODE 1SS119-25TD	
D5302	8-719-901-83	DIODE 1SS83TD	
D5325	8-719-911-19	DIODE 1SS119-25TD	
D5327	8-719-901-83	DIODE 1SS83TD	
D5350	8-719-911-19	DIODE 1SS119-25TD	
D5351	8-719-991-33	DIODE 1SS133T-77	
D5353	8-719-901-83	DIODE 1SS83TD	
D5375	8-719-991-33	DIODE 1SS133T-77	
D5376	8-719-991-33	DIODE 1SS133T-77	
D5377	8-719-908-03	DIODE GP08DPKG23	
D5378	8-719-921-88	DIODE MTZJ-T-77-13B	
D5379	8-719-982-96	DIODE MTZJ-T-77-2.2A	
D5380	8-719-982-96	DIODE MTZJ-T-77-2.2A	
D5381	8-719-031-34	DIODE RGP02-20EG23	
		< IC >	
IC5300	8-759-360-83	IC TDA6111Q/N4	
IC5325	8-759-360-83	IC TDA6111Q/N4	
IC5350	8-759-360-83	IC TDA6111Q/N4	

REF. NO.	PART.NO	DESCRIPTION	REMARK
		< SOCKET >	
J5375	⚠ 1-540-071-22	SOCKET, CRT	
		< COIL >	
L5300	1-408-591-11	INDUCTOR 1UH	
L5325	1-408-591-11	INDUCTOR 1UH	
L5350	1-408-591-11	INDUCTOR 1UH	
L5375	1-410-671-31	INDUCTOR 47UH	
L5376	1-532-637-00	LINK, IC 1A/150V	
L5377	1-414-183-41	INDUCTOR 10UH	
		< TRANSISTOR >	
Q5300	8-729-255-12	TRANSISTOR 2SC2551O-TPE2	
Q5301	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX	
Q5325	8-729-255-12	TRANSISTOR 2SC2551O-TPE2	
Q5326	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX	
Q5350	8-729-029-56	TRANSISTOR DTA144ESA-TP	
Q5351	8-729-255-12	TRANSISTOR 2SC2551O-TPE2	
Q5352	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX	
Q5375	8-729-119-78	TRANSISTOR 2SC1740S-RT	
Q5376	8-729-026-39	TRANSISTOR 2SA933AS-RT	
		< RESISTOR >	
R5300	1-249-417-11	CARBON 1K	5% 1/4W
R5301	1-247-807-31	CARBON 100	5% 1/4W
R5302	1-535-143-61	LEAD, JUMPER (5.0MM)	
R5303	1-208-790-11	METAL CHIP 2.2K	0.5% 1/10W
R5304	1-202-557-00	SOLID 220	20% 1/2W
R5305	1-215-929-11	METAL OXIDE 100K	5% 3W
R5306	1-249-424-11	CARBON 3.9K	5% 1/4W
R5307	1-249-433-11	CARBON 22K	5% 1/4W
R5308	1-216-057-00	RES-CHIP 2.2K	5% 1/10W
R5309	1-216-658-11	METAL CHIP 2K	0.5% 1/10W
R5310	1-216-059-00	RES-CHIP 2.7K	5% 1/10W
R5325	1-249-417-11	CARBON 1K	5% 1/4W
R5326	1-247-807-31	CARBON 100	5% 1/4W
R5327	1-535-143-61	LEAD, JUMPER (5.0MM)	
R5328	1-208-790-11	METAL CHIP 2.2K	0.5% 1/10W
R5329	1-202-557-00	SOLID 220	20% 1/2W
R5330	1-215-929-11	METAL OXIDE 100K	5% 3W
R5331	1-249-424-11	CARBON 3.9K	5% 1/4W
R5332	1-249-433-11	CARBON 22K	5% 1/4W
R5333	1-216-057-00	RES-CHIP 2.2K	5% 1/10W
R5334	1-216-059-00	RES-CHIP 2.7K	5% 1/10W
R5335	1-216-658-11	METAL CHIP 2K	0.5% 1/10W
R5350	1-249-417-11	CARBON 1K	5% 1/4W

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

REF. NO.	PART.NO	DESCRIPTION			REMARK
R5351	1-247-807-31	CARBON	100	5%	1/4W
R5352	1-249-416-11	CARBON	820	5%	1/4W
R5353	1-249-421-11	CARBON	2.2K	5%	1/4W
R5354	1-249-418-11	CARBON	1.2K	5%	1/4W
R5355	1-535-143-61	LEAD, JUMPER (5.0MM)			
R5356	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R5357	1-202-557-00	SOLID	220	20%	1/2W
R5358	1-215-929-11	METAL OXIDE	100K	5%	3W
R5359	1-249-433-11	CARBON	22K	5%	1/4W
R5360	1-249-424-11	CARBON	3.9K	5%	1/4W
R5361	1-249-431-11	CARBON	15K	5%	1/4W
R5362	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R5363	1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R5364	1-216-658-11	METAL CHIP	2K	0.5%	1/10W
R5375	1-249-435-11	CARBON	33K	5%	1/4W
R5376	1-249-429-11	CARBON	10K	5%	1/4W
R5377	1-249-430-11	CARBON	12K	5%	1/4W
R5378	1-249-429-11	CARBON	10K	5%	1/4W
R5379	1-249-438-11	CARBON	56K	5%	1/4W
R5380	1-249-433-11	CARBON	22K	5%	1/4W
R5381	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R5382	1-202-549-00	SOLID	100	20%	1/2W
R5383	1-216-399-00	METAL OXIDE	6.8	5%	3W
R5384	1-216-399-00	METAL OXIDE	6.8	5%	3W
R5385	1-202-549-00	SOLID	100	20%	1/2W
R5386	1-202-884-11	SOLID	820K	20%	1/2W
R5387	1-202-884-11	SOLID	820K	20%	1/2W
R5388	1-215-911-11	METAL OXIDE	100	5%	3W
R5389	1-249-417-11	CARBON	1K	5%	1/4W

< VARIABLE RESISTOR >

REF. NO.	PART.NO	DESCRIPTION
RV5375	1-241-656-21	RES, ADJ, METAL FILM 110M
RV5376	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M

*A-1640-328-A D Board, Complete (KV-28FX65)
*A-1640-399-A D Board, Complete (KV-32FX65B/32FX65E/32FX65K)
*A-1640-323-A D Board, Complete (KV-32FX65U)

D Board, Common Parts

PART.NO	DESCRIPTION
1-695-915-11	TAB (CONTACT)
4-201-023-01	SPACER, INSULATING
4-202-373-01	SPRING, IC
4-382-854-11	SCREW (M3X10), P, SW (+)
*4-931-401-01	HEAT SINK, V.OUT

< CAPACITOR >

REF. NO.		PART.NO	DESCRIPTION			REMARK
C6600	⚠	1-113-927-11	CERAMIC	10000PF	20.00%	250V
C6603		1-126-933-11	ELECT	100UF	20.00%	16V
C6604		1-126-767-11	ELECT	1000UF	20.00%	16V
C6605	⚠	1-119-888-51	CERAMIC	2200PF	20.00%	250V
C6606	⚠	1-119-888-51	CERAMIC	2200PF	20.00%	250V
C6607	⚠	1-107-565-11	FILM	0.33UF	20.00%	300V
C6608	⚠	1-161-964-91	CERAMIC	0.0047UF		250V
C6609	⚠	1-161-964-91	CERAMIC	0.0047UF		250V
C6610	⚠	1-161-964-91	CERAMIC	0.0047UF		250V
C6611	⚠	1-161-964-91	CERAMIC	0.0047UF		250V
C6612		1-113-927-11	CERAMIC	10000PF	20.00%	250V
C6616		1-164-625-11	CERAMIC	680PF	10.00%	500V
C6617		1-164-625-11	CERAMIC	680PF	10.00%	500V
C6618		1-136-175-00	FILM	0.68UF	5.00%	50V
C6619		1-137-194-81	FILM	0.47UF	5.00%	50V
C6620		1-136-618-11	FILM	0.047UF	5.00%	1.25KV
C6621		1-136-175-00	FILM	0.68UF	5.00%	50V
C6622		1-164-625-11	CERAMIC	680PF	10.00%	500V
C6623		1-137-194-81	FILM	0.47UF	5.00%	50V
C6624		1-126-968-11	ELECT	100UF	20.00%	50V
C6626		1-164-625-11	CERAMIC	680PF	10.00%	500V
C6627		1-164-625-11	CERAMIC	680PF	10.00%	500V
C6628		1-126-936-11	ELECT	3300UF	20.00%	16V
C6629		1-128-548-11	ELECT	4700UF	20.00%	25V
C6630		1-110-626-11	ELECT	330UF	20.00%	160V
C6631		1-126-955-11	ELECT	4700UF	20.00%	35V
C6632		1-126-955-11	ELECT	4700UF	20.00%	35V
C6634		1-136-165-00	FILM	0.1UF	5.00%	50V
C6635		1-104-664-11	ELECT	47UF	20.00%	25V
C6636		1-102-129-00	CERAMIC	0.01UF	10.00%	50V
C6637		1-102-129-00	CERAMIC	0.01UF	10.00%	50V
C6638		1-137-368-11	MYLAR	0.0047UF	5.00%	50V
C6639		1-102-228-00	CERAMIC	470PF	10.00%	500V
C6641		1-126-967-11	ELECT	47UF	20.00%	50V
C6642		1-128-551-11	ELECT	22UF	20.00%	25V
C6647		1-104-664-11	ELECT	47UF	20.00%	25V
C6649		1-126-965-11	ELECT	22UF	20.00%	50V
C6651		1-161-964-91	CERAMIC	0.0047UF		250V
C6653		1-126-968-11	ELECT	100UF	20.00%	50V
C6654		1-162-117-00	CERAMIC	100PF	10.00%	500V
C6655		1-107-974-11	CERAMIC	47PF	5.00%	2KV
C6656		1-126-967-11	ELECT	47UF	20.00%	50V
C6657		1-126-941-11	ELECT	470UF	20.00%	25V
C6658		1-104-665-11	ELECT	100UF	20.00%	25V
C6659		1-104-665-11	ELECT	100UF	20.00%	25V

D

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

REF. NO.	PART.NO	DESCRIPTION	REMARK
C6661	1-117-753-11	ELECT(BLOCK) 470UF	20.00% 450V
C6662	1-136-165-00	FILM 0.1UF	5.00% 50V
C6664	1-136-153-00	FILM 0.01UF	5.00% 50V
C6665	1-136-165-00	FILM 0.1UF	5.00% 50V
C6666	1-136-165-00	FILM 0.1UF	5.00% 50V
C6667	1-126-933-11	ELECT 100UF	20.00% 16V
C6668	1-126-933-11	ELECT 100UF	20.00% 16V
C6669	1-136-165-00	FILM 0.1UF	5.00% 50V
C6670	1-136-165-00	FILM 0.1UF	5.00% 50V
C6671	1-104-664-11	ELECT 47UF	20.00% 16V
C6672	1-104-664-11	ELECT 47UF	20.00% 16V
C6677	1-136-165-00	FILM 0.1UF	5.00% 50V
C6679	1-130-495-00	MYLAR 0.1UF	5.00% 50V
C6680	1-137-150-11	MYLAR 0.01UF	5.00% 50V
C6681	1-126-964-11	ELECT 10UF	20.00% 50V
C6700	1-102-129-00	CERAMIC 0.01UF	10.00% 50V
C6703	1-128-527-11	ELECT 330UF	20.00% 25V
C6704	1-126-968-11	ELECT 100UF	20.00% 50V
C6705	1-128-527-11	ELECT 330UF	20.00% 25V
C6706	1-137-401-11	MYLAR 0.22UF	10.00% 100V
C6707	1-129-702-00	MYLAR 0.001UF	10.00% 400V
C6708	1-106-220-00	MYLAR 0.1UF	10.00% 100V
C6709	1-102-129-00	CERAMIC 0.01UF	10.00% 50V
C6710	1-130-785-11	MYLAR 0.47UF	10.00% 100V
C6727	1-102-228-00	CERAMIC 470PF	10.00% 500V
C6801	1-104-664-11	ELECT 47UF	20.00% 25V
C6802	1-126-960-11	ELECT 1UF	20.00% 50V
C6803	1-126-960-11	ELECT 1UF	20.00% 50V
C6804	1-102-114-00	CERAMIC 470PF	10.00% 50V
C6805	1-102-114-00	CERAMIC 470PF	10.00% 50V
C6808	1-102-030-00	CERAMIC 330PF	10.00% 500V
C6809	1-102-030-00	CERAMIC 330PF	10.00% 500V
C6810	1-107-368-11	MYLAR 0.047UF	10.00% 200V
C6811	1-107-368-11	MYLAR 0.047UF	10.00% 200V
C6812	1-162-131-11	CERAMIC 220PF	10.00% 2KV
C6813	1-162-134-11	CERAMIC 470PF	10.00% 2KV
C6816	1-130-471-00	MYLAR 0.001UF	5.00% 50V
C6817	1-125-893-11	FILM 680PF	3.00% 1.5KV
C6818	1-125-893-11	FILM 680PF	3.00% 1.5KV
C6819	1-125-893-11	FILM 680PF	3.00% 1.5KV
C6820	1-125-893-11	FILM 680PF	3.00% 1.5KV
C6824	1-107-846-11	FILM 0.1UF	5.00% 250V
C6827	1-107-846-11	FILM 0.1UF	5.00% 250V
C6828	1-127-681-11	FILM MELF 10000PF	2% 100V
C6829	1-127-680-11	FILM MELF 4700PF	2% 100V
C6830	1-107-655-11	ELECT 47UF	20.00% 250V
C6831	1-102-228-00	CERAMIC 470PF	10.00% 500V
C6832	1-126-941-11	ELECT 470UF	20.00% 25V
C6833	1-126-941-11	ELECT 470UF	20.00% 25V
C6834	1-102-228-00	CERAMIC 470PF	10.00% 500V
C6835	1-102-228-00	CERAMIC 470PF	10.00% 500V
C6836	1-123-024-21	ELECT 33UF	160V
C6837	1-106-375-12	MYLAR 0.022UF	10.00% 250V
C6840	1-137-150-11	MYLAR 0.01UF	5.00% 50V
C6841	1-104-664-11	ELECT 47UF	20.00% 16V
C6844	1-115-513-21	FILM 0.18UF	5.00% 250V
C6851	1-162-131-11	CERAMIC 220PF	10.00% 2KV
C6852	1-162-129-00	CERAMIC 150PF	10.00% 2KV
C6853	1-129-898-00	FILM 0.0022UF	5.00% 630V
C6855	1-136-205-11	MYLAR 0.022UF	10.00% 400V
C6856	1-102-030-00	CERAMIC 330PF	10.00% 500V
C6857	1-130-785-11	MYLAR 0.47UF	10.00% 100V
C6861	1-130-471-00	MYLAR 0.001UF	5.00% 50V
C6862	1-130-471-00	MYLAR 0.001UF	5.00% 50V

< CONNECTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
CN6100	1-785-802-11	PIN, CONNECTOR (WITH PWB) 20P	
CN6101	1-785-802-11	PIN, CONNECTOR (WITH PWB) 20P	
CN6102	1-785-802-11	PIN, CONNECTOR (WITH PWB) 20P	
CN6500	1-508-766-00	PIN, CONNECTOR (5MM PITCH) 4P	
CN6600	1-695-299-11	CONNECTOR, BOARD TO BOARD 50P	
CN6611	*1-785-270-12	PIN, DY CONNECTOR (PC BOARD)	
CN6620	⚠ 1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
CN6666	⚠ *1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
CN6700	⚠ *1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P	

< DIODE >

REF. NO.	PART.NO	DESCRIPTION	REMARK
D6600	8-719-911-19	DIODE 1SS119-25TD	
D6601	8-719-063-73	DIODE D1NL20U-TR	
D6602	8-719-109-89	DIODE MTZJ-T-77-5.6B	
D6603	8-719-911-19	DIODE 1SS119-25TD	
D6604	8-719-510-53	DIODE D4SB60L-F	
D6605	8-719-991-33	DIODE 1SS133T-77	
D6610	8-719-063-73	DIODE D1NL20U-TR	
D6613	8-719-911-19	DIODE 1SS119-25TD	
D6615	8-719-911-19	DIODE 1SS119-25TD	
D6616	8-719-510-12	DIODE D10SC4M-F	
D6617	8-719-500-71	DIODE D8LC40F	
D6618	8-719-079-50	DIODE RBV-402L	
D6619	8-719-510-12	DIODE D10SC4M-F	
D6621	8-719-991-33	DIODE 1SS133T-77	
D6622	8-719-991-33	DIODE 1SS133T-77	
D6623	8-719-911-19	DIODE 1SS119-25TD	
D6624	8-719-991-33	DIODE 1SS133T-77	

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

REF. NO.	PART.NO	DESCRIPTION	REMARK
D6625	8-719-991-33	DIODE 1SS133T-77	
D6626	8-719-991-33	DIODE 1SS133T-77	
D6627	8-719-982-27	DIODE MTZJ-T-77-33C	
D6628	8-719-109-97	DIODE MTZJ-T-77-6.8	
D6629	8-719-991-33	DIODE 1SS133T-77	
D6630	8-719-991-33	DIODE 1SS133T-77	
D6631	8-719-991-33	DIODE 1SS133T-77	
D6651	8-719-068-00	DIODE ERC04-06SE	
D6653	8-719-063-73	DIODE D1NL20U-TR	
D6654	8-719-059-23	DIODE P6KE200AG23	
D6655	8-719-979-64	DIODE UF4005PKG23	
D6656	8-719-063-73	DIODE D1NL20U-TR	
D6658	8-719-068-00	DIODE ERC04-06SE	
D6659	8-719-063-73	DIODE D1NL20U-TR	
D6676	8-719-991-33	DIODE 1SS133T-77	
D6677	8-719-921-40	DIODE MTZJ-T-77-4.7B	
D6678	8-719-921-40	DIODE MTZJ-T-77-4.7B	
D6679	8-719-991-33	DIODE 1SS133T-77	
D6681	8-719-991-33	DIODE 1SS133T-77	
D6700	8-719-200-02	DIODE ERA15-02TP1	
D6701	8-719-110-41	DIODE MTZJ-T-77-15B	
D6803	8-719-920-35	DIODE ERA15-02TP1	
D6804	1-535-143-11	LEAD, JUMPER (10.0MM)	
D6805	8-719-302-43	DIODE RGP10GPKG23	
D6806	8-719-979-85	DIODE RGP15GPKG23	
D6807	8-719-510-73	DIODE S3L20UF4	
D6808	8-719-510-73	DIODE S3L20UF4	
D6809	8-719-991-33	DIODE 1SS133T-77	
D6810	1-247-895-91	CARBON 470K 5% 1/4W	
D6811	8-719-110-41	DIODE MTZJ-T-77-15B	
D6851	8-719-970-87	DIODE ERA38-06TP1	
D6852	8-719-970-87	DIODE ERA38-06TP1	

< FERRITE BEAD >

REF. NO.	PART.NO	DESCRIPTION	REMARK
FB6602	1-410-396-41	FERRITE 0.45UH	
FB6603	1-410-396-41	FERRITE 0.45UH	

< IC >

REF. NO.	PART.NO	DESCRIPTION	REMARK
IC6600	1-810-051-11	POWER MODULE DM-48	
IC6604	8-729-045-40	TRANSISTOR MX0842A-F	
IC6651	8-759-468-89	IC TOP209P	
IC6652	8-759-394-35	IC BA12T	
IC6653	8-759-574-77	IC KA78R09-YDTU	
IC6654	8-759-574-76	IC KA78R05-SYDTU	
IC6667	8-759-908-15	IC TL431CZ	
IC6676	8-759-908-15	IC TL431CZ	
IC6700	8-759-192-71	IC STV9379	
IC6801	8-759-103-93	IC LM393P	

< COIL >

REF. NO.	PART.NO	DESCRIPTION	REMARK
L6604	1-412-525-31	INDUCTOR 10UH	
L6605	1-412-523-41	INDUCTOR 6.8UH	
L6606	1-412-525-31	INDUCTOR 10UH	
L6651	1-414-183-41	INDUCTOR 10UH	
L6700	1-412-524-11	INDUCTOR 8.2UH	
L6801	1-412-519-11	INDUCTOR 3.3UH	
L6802	1-412-519-11	INDUCTOR 3.3UH	
L6803	1-412-533-41	INDUCTOR 47UH	
L6805	1-408-947-00	INDUCTOR 2.2MH	
L6806	1-535-143-61	LEAD, JUMPER (5.0MM)	
L6807	1-410-397-21	FERRITE 1.1UH	
L6851	1-535-143-61	LEAD, JUMPER (5.0MM)	

< FILTER >

REF. NO.	PART.NO	DESCRIPTION	REMARK
LF6603	1-406-659-11	INDUCTOR 10UH	
LF6604	1-406-659-11	INDUCTOR 10UH	
LF6801	1-406-985-11	INDUCTOR 2.2MH	
LF6851	1-406-674-11	INDUCTOR 3.3MH	

< IC LINK >

REF. NO.	PART.NO	DESCRIPTION	REMARK
PS6601 ⚠	1-801-550-21	PROTECTOR, MODULE 2.5A MP250	
PS6602 ⚠	1-801-550-21	PROTECTOR, MODULE 2.5A MP250	
PS6603 ⚠	1-801-549-21	PROTECTOR, MODULE 4.0A MP250	
PS6604 ⚠	1-801-550-21	PROTECTOR, MODULE 2.5A MP250	

< TRANSISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
Q6600	8-729-046-47	TRANSISTOR KSC2500-BTA	
Q6602	8-729-026-39	TRANSISTOR 2SA933AS-RT	
Q6603	8-729-119-78	TRANSISTOR 2SC1740S-RT	
Q6605	8-729-046-47	TRANSISTOR KSC2500-BTA	
Q6606	8-729-029-56	TRANSISTOR DTA144ESA-TP	
Q6607	8-729-119-78	TRANSISTOR 2SC1740S-RT	
Q6608	8-729-029-66	TRANSISTOR DTC114ESA-TP	
Q6611	8-729-029-66	TRANSISTOR DTC114ESA-TP	
Q6651	8-729-026-39	TRANSISTOR 2SA933AS-RT	
Q6652	8-729-029-86	TRANSISTOR DTC124ESA-TP	
Q6667	8-729-026-39	TRANSISTOR 2SA933AS-RT	
Q6676	8-729-119-78	TRANSISTOR 2SC1740S-RT	
Q6677	8-729-119-78	TRANSISTOR 2SC1740S-RT	
Q6678	8-729-119-78	TRANSISTOR 2SC1740S-RT	
Q6679	8-729-026-39	TRANSISTOR 2SA933AS-RT	
Q6680	8-729-029-66	TRANSISTOR DTC114ESA-TP	
Q6681	8-729-029-66	TRANSISTOR DTC114ESA-TP	
Q6700	8-729-039-68	TRANSISTOR IRF620	

D

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

REF. NO.		PART.NO	DESCRIPTION			REMARK
Q6801		8-729-119-80	TRANSISTOR 2SC2688-LK			
Q6802		8-729-119-80	TRANSISTOR 2SC2688-LK			
Q6803		8-729-046-18	TRANSISTOR 2SC5480-01			
Q6804		8-729-046-18	TRANSISTOR 2SC5480-01			
Q6805		8-729-038-83	TRANSISTOR 2SK2251-01-F19			
Q6806		8-729-047-59	TRANSISTOR STP5NB40FP			
Q6807		8-729-030-02	TRANSISTOR DTC144ESA-TP			
Q6851		8-729-043-95	TRANSISTOR 2SC3840K			
		< RESISTOR >				
R6601	⚠	1-202-968-11	CEMENTED	1.2	5%	10W
R6602		1-249-433-11	CARBON	22K	5%	1/4W
R6603		1-249-430-11	CARBON	12K	5%	1/4W
R6604		1-249-421-11	CARBON	2.2K	5%	1/4W
R6605		1-249-417-11	CARBON	1K	5%	1/4W
R6606	⚠	1-202-968-11	CEMENTED	1.2	5%	10W
R6608	⚠	1-220-797-11	CEMENTED	0.47	5%	10W
R6611		1-260-125-11	CARBON	150K	5%	1/2W
R6612		1-260-125-11	CARBON	150K	5%	1/2W
R6613		1-216-369-00	METAL OXIDE	1	5%	2W
R6614		1-260-125-11	CARBON	150K	5%	1/2W
R6615		1-260-125-11	CARBON	150K	5%	1/2W
R6616		1-216-369-00	METAL OXIDE	1	5%	2W
R6619		1-249-425-11	CARBON	4.7K	5%	1/4W
R6620		1-249-443-11	CARBON	0.47	5%	1/4W
R6624		1-249-425-11	CARBON	4.7K	5%	1/4W
R6625		1-249-429-11	CARBON	10K	5%	1/4W
R6626		1-247-807-31	CARBON	100	5%	1/4W
R6627		1-249-429-11	CARBON	10K	5%	1/4W
R6628		1-260-129-11	CARBON	330K	5%	1/2W
R6629		1-260-129-11	CARBON	330K	5%	1/2W
R6630		1-249-417-11	CARBON	1K	5%	1/4W
R6631		1-249-425-11	CARBON	4.7K	5%	1/4W
R6632		1-207-905-00	WIREWOUND	0.27	10%	2W
R6633		1-249-429-11	CARBON	10K	5%	1/4W
R6635		1-535-143-11	LEAD, JUMPER (10.0MM)			
R6637		1-249-421-11	CARBON	2.2K	5%	1/4W
R6638		1-247-895-91	CARBON	470K	5%	1/4W
R6639		1-249-416-11	CARBON	820	5%	1/4W
R6640		1-249-417-11	CARBON	1K	5%	1/4W
R6641		1-260-127-11	CARBON	220K	5%	1/2W
R6642		1-249-389-11	CARBON	4.7	5%	1/4W
R6643		1-249-417-11	CARBON	1K	5%	1/4W
R6644		1-249-429-11	CARBON	10K	5%	1/4W
R6645		1-260-131-11	CARBON	470K	5%	1/2W
R6646		1-249-429-11	CARBON	10K	5%	1/4W
R6647		1-249-410-11	CARBON	270	5%	1/4W
R6648		1-249-433-11	CARBON	22K	5%	1/4W
R6649		1-215-926-00	METAL OXIDE	33K	5%	3W
R6651		1-247-791-91	CARBON	22	5%	1/4W
R6652		1-249-389-11	CARBON	4.7	5%	1/4W
R6653		1-249-421-11	CARBON	2.2K	5%	1/4W
R6655		1-249-429-11	CARBON	10K	5%	1/4W
R6656	⚠	1-218-265-11	METAL	8.2M	5%	1W
R6657		1-215-421-00	METAL	1K	1%	1/4W
R6666		1-202-933-61	FUSIBLE	0.1	10%	1/2W
R6667		1-215-441-00	METAL	6.8K	1%	1/4W
R6668		1-249-428-11	CARBON	8.2K	5%	1/4W
R6669		1-249-413-11	CARBON	470	5%	1/4W
R6676		1-249-417-11	CARBON	1K	5%	1/4W
R6677		1-249-417-11	CARBON	1K	5%	1/4W
R6678		1-249-417-11	CARBON	1K	5%	1/4W
R6679		1-215-479-00	METAL	270K	1%	1/4W
R6681		1-215-467-00	METAL	82K	1%	1/4W
R6682		1-215-447-00	METAL	12K	1%	1/4W
R6683		1-215-429-00	METAL	2.2K	1%	1/4W
R6684		1-247-807-31	CARBON	100	5%	1/4W
R6685		1-249-417-11	CARBON	1K	5%	1/4W
R6686		1-215-449-00	METAL	15K	1%	1/4W
R6687		1-249-431-11	CARBON	15K	5%	1/4W
R6688		1-249-417-11	CARBON	1K	5%	1/4W
R6689		1-247-843-11	CARBON	3.3K	5%	1/4W
R6690		1-249-429-11	CARBON	10K	5%	1/4W
R6691		1-215-446-00	METAL	11K	1%	1/4W
R6692		1-215-445-00	METAL	10K	1%	1/4W
R6700		1-215-441-00	METAL	6.8K	1%	1/4W
R6701		1-215-437-00	METAL	4.7K	1%	1/4W
R6702		1-215-441-00	METAL	6.8K	1%	1/4W
R6703		1-215-437-00	METAL	4.7K	1%	1/4W
R6704		1-249-383-11	CARBON	1.5	5%	1/4W
R6705		1-247-791-91	CARBON	22	5%	1/4W
R6706		1-249-389-11	CARBON	4.7	5%	1/4W
R6707		1-215-888-00	METAL OXIDE	220	5%	2W
R6708		1-214-798-21	METAL	1.8	1%	1/2W
R6709		1-214-798-21	METAL	1.8	1%	1/2W
R6710		1-247-843-11	CARBON	3.3K	5%	1/4W
R6711		1-249-418-11	CARBON	1.2K	5%	1/4W
R6801		1-215-440-00	METAL	6.2K	1%	1/4W
R6802		1-214-915-00	METAL	120K	1%	1/2W
R6803		1-249-421-11	CARBON	2.2K	5%	1/4W
R6804		1-249-408-11	CARBON	180	5%	1/4W
R6805		1-249-408-11	CARBON	180	5%	1/4W
R6806		1-249-411-11	CARBON	330	5%	1/4W
R6807		1-249-411-11	CARBON	330	5%	1/4W

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

REF. NO.		PART.NO	DESCRIPTION			REMARK
R6808		1-260-340-11	CARBON	10K	5%	1/2W
R6809		1-260-340-11	CARBON	10K	5%	1/2W
R6811		1-216-461-00	METAL OXIDE	5.6K	5%	2W
R6812		1-215-895-11	METAL OXIDE	3.3K	5%	2W
R6813		1-215-920-11	METAL OXIDE	3.3K	5%	3W
R6814		1-215-880-00	METAL OXIDE	10	5%	2W
R6815		1-215-880-00	METAL OXIDE	10	5%	2W
R6816		1-216-361-00	METAL OXIDE	0.22	5%	2W
R6817		1-216-361-00	METAL OXIDE	0.22	5%	2W
R6818		1-249-405-11	CARBON	100	5%	1/4W
R6819		1-247-807-31	CARBON	100	5%	1/4W
R6820		1-535-143-51	LEAD, JUMPER (20.0MM)			
R6821		1-535-143-51	LEAD, JUMPER (20.0MM)			
R6831		1-260-124-11	CARBON	120K	5%	1/2W
R6832		1-216-434-11	METAL OXIDE	1.8K	5%	1W
R6833		1-202-972-61	FUSIBLE	1	5%	1/4W
R6834		1-535-143-21	LEAD, JUMPER (12.5MM)			
R6835		1-260-288-11	CARBON	0.47	5%	1/2W
R6837		1-215-919-11	METAL OXIDE	2.2K	5%	3W
R6838		1-214-905-11	METAL	47K	1%	1/2W
R6839		1-215-919-11	METAL OXIDE	2.2K	5%	3W
R6840		1-247-843-11	CARBON	3.3K	5%	1/4W
R6842		1-260-123-11	CARBON	100K	5%	1/2W
R6843		1-249-429-11	CARBON	10K	5%	1/4W
R6844		1-249-441-11	CARBON	100K	5%	1/4W
R6845		1-249-433-11	CARBON	22K	5%	1/4W
R6851		1-260-123-11	CARBON	100K	5%	1/2W
R6852		1-260-123-11	CARBON	100K	5%	1/2W
R6853		1-260-123-11	CARBON	100K	5%	1/2W
R6854		1-249-417-11	CARBON	1K	5%	1/4W
R6880		1-215-436-00	METAL	4.3K	1%	1/4W
R6885		1-215-493-00	METAL	1M	1%	1/4W
R6886		1-215-477-00	METAL	220K	1%	1/4W
R6887		1-215-461-00	METAL	47K	1%	1/4W
R6888		1-249-441-11	CARBON	100K	5%	1/4W
R6891		1-535-143-61	LEAD, JUMPER (5.0MM)			
R6892		1-535-143-61	LEAD, JUMPER (5.0MM)			
R6895		1-249-443-11	CARBON	0.47	5%	1/4W
R6896		1-249-443-11	CARBON	0.47	5%	1/4W
R6898		1-215-493-00	METAL	1M	1%	1/4W
R6899		1-215-493-00	METAL	1M	1%	1/4W

< RELAY >

REF. NO.		PART.NO	DESCRIPTION
RY6601	⚠	1-755-266-11	RELAY, AC POWER
RY6602	⚠	1-755-167-11	RELAY, AC POWER

< TRANSFORMER >

REF. NO.		PART.NO	DESCRIPTION
T6600	⚠	1-431-616-11	TRANSFORMER, CONVERTER
T6601	⚠	1-433-516-11	TRANSFORMER, CONVERTER (PIT)
T6651		1-431-732-21	TRANSFORMER, CONVERTER (SRT)
T6801		1-433-489-31	TRANSFORMER, FERRITE (HDT)
T6802		1-433-489-31	TRANSFORMER, FERRITE (HDT)
T6804	⚠	1-453-340-21	TRANSFORMER ASSY, FLYBACK (NX4522//U214)
T6852		1-433-487-11	TRANSFORMER, FERRITE (DFT)

< THERMISTOR >

REF. NO.		PART.NO	DESCRIPTION
TH6600	⚠	1-809-827-11	THERMISTOR, POSITIVE
TH6700		1-800-193-00	THERMISTOR

D Board Variant Parts KV-28FX65

< CAPACITOR >

REF. NO.	PART.NO	DESCRIPTION			REMARK
C6652	1-107-678-11	ELECT	4.7UF	20.00%	450V
C6682	1-535-143-61	LEAD,JUMPER (5.0MM)			
C6814	1-117-641-11	FILM	7500PF	3.00%	1.2KV
C6815	1-117-836-11	FILM	6800PF	3.00%	1.5KV
C6825	1-115-514-11	FILM	0.22UF	5.00%	250V
C6826	1-115-520-11	FILM	0.68UF	5.00%	250V

< DIODE >

REF. NO.	PART.NO	DESCRIPTION
D6652	8-719-923-78	DIODE MTZJ-T-77-12

< RESISTOR >

REF. NO.	PART.NO	DESCRIPTION			REMARK
R6810	1-215-920-11	METAL OXIDE	3.3K	5%	3W
R6836	1-249-432-11	CARBON	18K	5%	1/4W
R6856	1-216-486-00	METAL OXIDE	8.2K	5%	3W
R6857	1-216-486-00	METAL OXIDE	8.2K	5%	3W
R6858	1-216-486-00	METAL OXIDE	8.2K	5%	3W
R6859	1-216-486-00	METAL OXIDE	8.2K	5%	3W
R6897	1-215-485-00	METAL	470K	1%	1/4W

D Board Variant Parts KV-32FX65

< CAPACITOR >

REF. NO.	PART.NO	DESCRIPTION			REMARK
C6652	1-107-679-91	ELECT	10UF	20.00%	450V (KV-32FX65B/32FX65E/32FX65K)
	1-107-678-11	ELECT	4.7UF	20.00%	450V (KV-32FX65U)
C6682	1-107-679-91	ELECT	10UF	20.00%	450V (KV-32FX65B/32FX65E/32FX65K)
	1-535-143-61	LEAD,JUMPER (5.0MM)			(KV-32FX65U)

REF. NO.	PART.NO	DESCRIPTION	REMARK
C6814	1-117-640-11	FILM 6800PF 3.00% 1.2KV	
C6815	1-117-835-11	FILM 6200PF 3.00% 1.5KV	
C6825	1-117-662-11	FILM 0.18UF 5.00% 250V	
C6826	1-115-519-11	FILM 0.56UF 5.00% 250V	

< DIODE >

REF. NO.	PART.NO	DESCRIPTION	REMARK
D6652	8-719-923-79	DIODE MTZJ-T-77-12A	(KV-32FX65B/32FX65E/32FX65K)
	8-719-923-78	DIODE MTZJ-T-77-12	(KV-32FX65U)

< RESISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
R6810	1-215-484-00	METAL OXIDE 3.9K 5% 3W	
R6836	1-249-431-11	CARBON 15K 5% 1/4W	
R6856	1-216-485-00	METAL OXIDE 5.6K 5% 3W	
R6857	1-216-485-00	METAL OXIDE 5.6K 5% 3W	
R6858	1-216-485-00	METAL OXIDE 5.6K 5% 3W	
R6859	1-216-485-00	METAL OXIDE 5.6K 5% 3W	
R6897	1-215-489-00	METAL 680K 1% 1/4W	

***A-1640-382-A D1 Board, Complete**
(KV-28FX65)
***A-1640-322-A D1 Board, Complete**
(KV-32FX65B/32FX65E/32FX65K)
***A-1640-385-A D1 Board, Complete**
(KV-32FX65U)

D1 Board, Common Parts

REF. NO.	PART.NO	DESCRIPTION	REMARK
	4-382-854-11	SCREW (M3X10), P, SW (+)	

< CAPACITOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
C6100	1-136-165-00	FILM 0.1UF 5.00% 50V	
C6101	1-136-165-00	FILM 0.1UF 5.00% 50V	
C6102	1-136-165-00	FILM 0.1UF 5.00% 50V	
C6103	1-163-205-00	CERAMIC CHIP 0.001UF 5.00% 50V	
C6104	1-163-205-00	CERAMIC CHIP 0.001UF 5.00% 50V	
C6105	1-126-967-11	ELECT 47UF 20.00% 50V	
C6106	1-163-133-00	CERAMIC CHIP 470PF 5.00% 50V	
C6108	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C6109	1-126-967-11	ELECT 47UF 20.00% 50V	
C6110	1-126-967-11	ELECT 47UF 20.00% 50V	
C6112	1-163-037-11	CERAMIC CHIP 0.022UF 10.00% 50V	
C6113	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C6114	1-126-964-11	ELECT 10UF 20.00% 50V	
C6115	1-163-005-11	CERAMIC CHIP 470PF 10.00% 50V	
C6116	1-163-275-11	CERAMIC CHIP 0.001UF 5.00% 50V	
C6117	1-163-275-11	CERAMIC CHIP 0.001UF 5.00% 50V	
C6119	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C6120	1-163-809-11	CERAMIC CHIP 0.047UF 10.00% 25V	
C6121	1-126-964-11	ELECT 10UF 20.00% 50V	
C6122	1-126-967-11	ELECT 47UF 20.00% 50V	
C6125	1-163-017-00	CERAMIC CHIP 0.0047UF 10.00% 50V	
C6126	1-163-809-11	CERAMIC CHIP 0.047UF 10.00% 25V	
C6127	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C6128	1-163-017-00	CERAMIC CHIP 0.0047UF 10.00% 50V	
C6129	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C6131	1-126-964-11	ELECT 10UF 20.00% 50V	
C6132	1-163-259-91	CERAMIC CHIP 220PF 5.00% 50V	
C6199	1-163-229-11	CERAMIC CHIP 12PF 5.00% 50V	
C6207	1-126-967-11	ELECT 47UF 20.00% 50V	
C6208	1-126-967-11	ELECT 47UF 20.00% 50V	
C6210	1-163-009-11	CERAMIC CHIP 0.001UF 10.00% 50V	
C6250	1-104-664-11	ELECT 47UF 20.00% 16V	
C6253	1-115-339-11	CERAMIC CHIP 0.1UF 10.00% 50V	
C6254	1-136-177-00	FILM 1UF 5.00% 50V	
C6255	1-136-177-00	FILM 1UF 5.00% 50V	
C6256	1-163-251-11	CERAMIC CHIP 100PF 5.00% 50V	
C6257	1-115-339-11	CERAMIC CHIP 0.1UF 10.00% 50V	
C6258	1-163-127-00	CERAMIC CHIP 270PF 5.00% 50V	
C6259	1-110-501-11	CERAMIC CHIP 0.33UF 10.00% 16V	
C6260	1-104-664-11	ELECT 47UF 20.00% 16V	
C6261	1-115-339-11	CERAMIC CHIP 0.1UF 10.00% 50V	
C6262	1-136-165-00	FILM 0.1UF 5.00% 50V	
C6263	1-163-109-00	CERAMIC CHIP 47PF 5.00% 50V	
C6264	1-126-964-11	ELECT 10UF 20.00% 50V	
C6306	1-126-964-11	ELECT 10UF 20.00% 50V	
C6307	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C6350	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C6351	1-126-967-11	ELECT 47UF 20.00% 50V	
C6353	1-115-339-11	CERAMIC CHIP 0.1UF 10.00% 50V	
C6354	1-136-159-00	FILM 0.033UF 5.00% 50V	
C6355	1-163-251-11	CERAMIC CHIP 100PF 5.00% 50V	
C6356	1-163-809-11	CERAMIC CHIP 0.047UF 10.00% 25V	
C6357	1-136-165-00	FILM 0.1UF 5.00% 50V	
C6358	1-104-329-11	CERAMIC CHIP 0.1UF 10.00% 50V	
C6359	1-104-329-11	CERAMIC CHIP 0.1UF 10.00% 50V	
C6360	1-107-714-11	ELECT 10UF 20.00% 50V	
C6361	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C6362	1-164-182-11	CERAMIC CHIP 0.0033UF 10.00% 50V	
C6363	1-104-665-11	ELECT 100UF 20.00% 25V	
C6364	1-136-347-11	FILM 0.0047UF 5.00% 630V	
C6365	1-163-809-11	CERAMIC CHIP 0.047UF 10.00% 25V	
C6367	1-104-329-11	CERAMIC CHIP 0.1UF 10.00% 50V	
C6368	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C6370	1-136-347-11	FILM 0.0047UF 5.00% 630V	
C6373	1-136-153-00	FILM 0.01UF 5.00% 50V	

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

REF. NO.	PART.NO	DESCRIPTION	REMARK
C6374	1-129-716-00	FILM 0.015UF	5.00% 630V
C6375	1-102-110-00	CERAMIC 220PF	10.00% 50V
C6376	1-104-664-11	ELECT 47UF	20.00% 16V
C6377	1-128-551-11	ELECT 22UF	20.00% 25V
C6378	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
C6380	1-136-165-00	FILM 0.1UF	5.00% 50V
C6381	1-126-960-11	ELECT 1UF	20.00% 50V
C6385	1-104-664-11	ELECT 47UF	20.00% 25V
C6386	1-104-664-11	ELECT 47UF	20.00% 25V
C6388	1-126-964-11	ELECT 10UF	20.00% 50V
C6389	1-126-964-11	ELECT 10UF	20.00% 50V
C6392	1-104-664-11	ELECT 47UF	20.00% 25V
C6401	1-126-964-11	ELECT 10UF	20.00% 50V
C6402	1-107-714-11	ELECT 10UF	20.00% 50V
C6407	1-136-161-00	FILM 0.047UF	5.00% 50V
C6408	1-136-161-00	FILM 0.047UF	5.00% 50V
C6409	1-126-964-11	ELECT 10UF	20.00% 50V
		< CONNECTOR >	
CN6502	*1-564-509-11	PLUG, CONNECTOR 6P	
CN6600	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
CN6601	1-695-302-11	CONNECTOR, BOARD TO BOARD 50P	
CN6622	*1-564-506-11	PLUG, CONNECTOR 3P	
CN6633	*1-564-506-11	PLUG, CONNECTOR 3P	
		< DIODE >	
D6102	8-719-914-43	DIODE DAN202K-T-146	
D6104	8-719-914-43	DIODE DAN202K-T-146	
D6105	8-719-914-43	DIODE DAN202K-T-146	
D6107	8-719-914-43	DIODE DAN202K-T-146	
D6108	8-719-921-40	DIODE MTZJ-T-77-4.7B	
D6127	8-719-914-43	DIODE DAN202K-T-146	
D6128	8-719-914-43	DIODE DAN202K-T-146	
D6129	8-719-914-43	DIODE DAN202K-T-146	
D6198	1-535-143-61	LEAD, JUMPER (5.0MM)	
D6253	8-719-911-19	DIODE 1SS119-25TD	
D6254	1-535-143-61	LEAD, JUMPER (5.0MM)	
D6255	8-719-914-43	DIODE DAN202K-T-146	
D6350	8-719-914-43	DIODE DAN202K-T-146	
D6351	8-719-914-43	DIODE DAN202K-T-146	
D6352	8-719-914-43	DIODE DAN202K-T-146	
D6353	8-719-987-87	DIODE ERA82-004TP1	
D6354	8-719-914-43	DIODE DAN202K-T-146	
D6355	8-719-914-43	DIODE DAN202K-T-146	
D6358	8-719-914-43	DIODE DAN202K-T-146	
D6359	8-719-302-43	DIODE RGP10GPKG23	
D6401	8-719-914-43	DIODE DAN202K-T-146	

REF. NO.	PART.NO	DESCRIPTION	REMARK
D6402	8-719-982-03	DIODE MTZJ-T-77-3.6A	
D6403	8-719-921-63	DIODE MTZJ-T-77-7.5B	
D6404	8-719-914-43	DIODE DAN202K-T-146	
D6405	8-719-921-63	DIODE MTZJ-T-77-7.5B	
		< IC >	
IC6100	8-759-450-95	IC LM393N	
IC6101	8-759-450-95	IC LM393N	
IC6102	8-759-638-79	IC NJM3404AD-W	
IC6103	8-759-450-95	IC LM393N	
IC6251	8-759-903-16	IC LM318P	
IC6302	8-752-072-94	IC CXA1875AM-T4	
IC6350	8-759-008-70	IC LM358N	
IC6351	8-759-450-95	IC LM393N	
IC6352	8-759-450-95	IC LM393N	
IC6353	8-759-231-53	IC L7805CV	
IC6354	8-759-325-48	IC CA0005AD	
IC6355	8-759-008-70	IC LM358N	
IC6356	8-759-822-38	IC LA6510	
		< FILTER >	
LF6350	1-406-989-21	INDUCTOR 10MH	
LF6351	1-406-989-21	INDUCTOR 10MH	
		< IC LINK >	
PS6376 ⚠	1-532-637-00	LINK, IC 1A (ICP-N25)	
		< TRANSISTOR >	
Q6100	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q6101	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q6102	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q6103	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q6104	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q6105	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q6106	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q6107	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q6108	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q6110	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q6112	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q6113	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q6118	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q6119	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q6120	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q6122	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q6123	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q6125	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q6126	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	

D1

REF. NO.	PART.NO	DESCRIPTION			REMARK
Q6127	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			
Q6128	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R			
Q6129	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			
Q6201	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R			
Q6202	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R			
Q6250	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R			
Q6251	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R			
Q6252	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			
Q6253	8-729-045-04	TRANSISTOR 2SC5511			
Q6254	8-729-045-05	TRANSISTOR 2SA2005			
Q6350	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R			
Q6351	8-729-119-78	TRANSISTOR 2SC1740S-RT			
Q6352	8-729-140-97	TRANSISTOR 2SB734-T-3			
Q6353	8-729-140-97	TRANSISTOR 2SB734-T-3			
Q6354	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R			
Q6356	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R			
Q6358	8-729-038-83	TRANSISTOR 2SK2251-01-F19			
Q6401	1-801-806-11	TRANSISTOR DTC144EKA-T146			
Q6402	1-801-806-11	TRANSISTOR DTC144EKA-T146			
Q6403	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R			
Q6404	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			
Q6405	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			
Q6455	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R			
Q6465	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R			

< RESISTOR >

REF. NO.	PART.NO	DESCRIPTION			REMARK
R6100	1-216-033-00	RES-CHIP	220	5%	1/10W
R6101	1-216-033-00	RES-CHIP	220	5%	1/10W
R6102	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6103	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6104	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6105	1-216-049-11	RES-CHIP	1K	5%	1/10W
R6106	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6109	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R6110	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R6111	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6112	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6113	1-216-073-00	RES-CHIP	10K	5%	1/10W
R6114	1-216-073-00	RES-CHIP	10K	5%	1/10W
R6115	1-216-089-11	RES-CHIP	47K	5%	1/10W
R6116	1-216-089-11	RES-CHIP	47K	5%	1/10W
R6117	1-216-073-00	RES-CHIP	10K	5%	1/10W
R6118	1-216-073-00	RES-CHIP	10K	5%	1/10W
R6119	1-216-073-00	RES-CHIP	10K	5%	1/10W
R6120	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6121	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6122	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6123	1-216-089-11	RES-CHIP	47K	5%	1/10W
R6124	1-216-089-11	RES-CHIP	47K	5%	1/10W
R6125	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6126	1-216-037-00	RES-CHIP	330	5%	1/10W
R6128	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R6129	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R6131	1-216-037-00	RES-CHIP	330	5%	1/10W
R6132	1-216-037-00	RES-CHIP	330	5%	1/10W
R6133	1-216-037-00	RES-CHIP	330	5%	1/10W
R6135	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
R6136	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R6137	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R6138	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R6139	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R6140	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6143	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6146	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6148	1-216-295-11	SHORT	0		
R6149	1-216-025-11	RES-CHIP	100	5%	1/10W
R6155	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6160	1-216-295-11	SHORT	0		
R6162	1-216-049-11	RES-CHIP	1K	5%	1/10W
R6165	1-216-699-91	METAL CHIP	100K	0.5%	1/10W
R6168	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6169	1-216-699-91	METAL CHIP	100K	0.5%	1/10W
R6170	1-216-037-00	RES-CHIP	330	5%	1/10W
R6171	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6177	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6180	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6182	1-216-089-11	RES-CHIP	47K	5%	1/10W
R6183	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6188	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6190	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6191	1-215-925-11	METAL OXIDE	22K	5%	3W
R6194	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6195	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R6196	1-249-377-11	CARBON	0.47	5%	1/4W
R6199	1-216-081-00	RES-CHIP	22K	5%	1/10W
R6205	1-216-025-11	RES-CHIP	100	5%	1/10W
R6208	1-216-089-11	RES-CHIP	47K	5%	1/10W
R6210	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6211	1-216-073-00	RES-CHIP	10K	5%	1/10W
R6212	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6216	1-216-089-11	RES-CHIP	47K	5%	1/10W
R6217	1-216-073-00	RES-CHIP	10K	5%	1/10W
R6218	1-216-295-11	SHORT	0		
R6254	1-216-049-11	RES-CHIP	1K	5%	1/10W

REF. NO.	PART.NO	DESCRIPTION				REMARK
R6255	1-216-061-00	RES-CHIP	3.3K	5%	1/10W	
R6256	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R6257	1-216-061-00	RES-CHIP	3.3K	5%	1/10W	
R6258	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R6259	1-216-097-11	RES-CHIP	100K	5%	1/10W	
R6260	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R6261	1-216-097-11	RES-CHIP	100K	5%	1/10W	
R6262	1-260-321-71	CARBON	270	5%	1/2W	
R6263	1-216-025-11	RES-CHIP	100	5%	1/10W	
R6264	1-216-025-11	RES-CHIP	100	5%	1/10W	
R6267	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R6269	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W	
R6270	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W	
R6271	1-208-814-91	METAL CHIP	22K	0.5%	1/10W	
R6278	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R6279	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R6280	1-212-849-00	FUSIBLE	4.7	5%	1/4W	
R6281	1-212-849-00	FUSIBLE	4.7	5%	1/4W	
R6282	1-215-886-11	METAL OXIDE	100	5%	2W	
R6283	1-216-393-00	METAL OXIDE	2.2	5%	3W	
R6285	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R6313	1-216-295-11	SHORT	0			
R6322	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R6323	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R6324	1-216-025-11	RES-CHIP	100	5%	1/10W	
R6325	1-216-025-11	RES-CHIP	100	5%	1/10W	
R6350	1-216-089-11	RES-CHIP	47K	5%	1/10W	
R6351	1-218-762-11	METAL CHIP	270K	0.5%	1/10W	
R6353	1-208-802-11	METAL CHIP	6.8K	0.5%	1/10W	
R6355	1-218-774-11	METAL CHIP	820K	0.5%	1/10W	
R6356	1-208-806-11	METAL CHIP	10K	0.5%	1/10W	
R6357	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R6358	1-216-047-91	RES-CHIP	820	5%	1/10W	
R6359	1-216-097-11	RES-CHIP	100K	5%	1/10W	
R6360	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R6361	1-216-097-11	RES-CHIP	100K	5%	1/10W	
R6362	1-216-687-11	METAL CHIP	33K	0.5%	1/10W	
R6363	1-208-806-11	METAL CHIP	10K	0.5%	1/10W	
R6364	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R6365	1-216-033-00	RES-CHIP	220	5%	1/10W	
R6366	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R6367	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R6368	1-218-760-11	METAL CHIP	220K	0.5%	1/10W	
R6369	1-218-762-11	METAL CHIP	270K	0.5%	1/10W	
R6371	1-216-474-11	METAL OXIDE	82	5%	3W	
R6372	1-216-033-00	RES-CHIP	220	5%	1/10W	
R6373	1-216-681-11	METAL CHIP	18K	0.5%	1/10W	
R6374	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R6375	1-216-041-00	RES-CHIP	470	5%	1/10W	
R6377	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R6378	1-208-806-11	METAL CHIP	10K	0.5%	1/10W	
R6379	1-216-295-11	SHORT	0			
R6380	1-218-754-11	METAL CHIP	120K	0.5%	1/10W	
R6381	1-216-045-00	RES-CHIP	680	5%	1/10W	
R6382	1-218-754-11	METAL CHIP	120K	0.5%	1/10W	
R6383	1-216-687-11	METAL CHIP	33K	0.5%	1/10W	
R6384	1-216-043-91	RES-CHIP	560	5%	1/10W	
R6385	1-216-295-11	SHORT	0			
R6386	1-216-699-91	METAL CHIP	100K	0.5%	1/10W	
R6387	1-216-677-11	METAL CHIP	12K	0.5%	1/10W	
R6391	1-249-417-11	CARBON	1K	5%	1/4W	
R6394	1-216-069-00	RES-CHIP	6.8K	5%	1/10W	
R6395	1-216-081-00	RES-CHIP	22K	5%	1/10W	
R6397	1-208-806-11	METAL CHIP	10K	0.5%	1/10W	
R6398	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R6401	1-216-295-11	SHORT	0			
R6402	1-216-295-11	SHORT	0			
R6403	1-216-661-11	METAL CHIP	2.7K	0.5%	1/10W	
R6404	1-208-814-91	METAL CHIP	22K	0.5%	1/10W	
R6405	1-208-814-91	METAL CHIP	22K	0.5%	1/10W	
R6409	1-216-025-11	RES-CHIP	100	5%	1/10W	
R6410	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R6411	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R6412	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R6413	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R6414	1-208-814-91	METAL CHIP	22K	0.5%	1/10W	
R6415	1-208-814-91	METAL CHIP	22K	0.5%	1/10W	
R6416	1-208-814-91	METAL CHIP	22K	0.5%	1/10W	
R6418	1-216-091-00	RES-CHIP	56K	5%	1/10W	
R6419	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R6420	1-216-089-11	RES-CHIP	47K	5%	1/10W	
R6421	1-216-637-11	METAL CHIP	270	0.5%	1/10W	
R6422	1-208-770-11	METAL CHIP	330	0.5%	1/10W	
R6423	1-216-657-11	METAL CHIP	1.8K	0.5%	1/10W	
R6426	1-216-081-00	RES-CHIP	22K	5%	1/10W	
R6427	1-216-081-00	RES-CHIP	22K	5%	1/10W	
R6429	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R6430	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R6432	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R6433	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R6437	1-249-422-11	CARBON	2.7K	5%	1/4W	
R6438	1-249-421-11	CARBON	2.2K	5%	1/4W	
R6439	1-208-814-91	METAL CHIP	22K	0.5%	1/10W	
R6440	1-208-814-91	METAL CHIP	22K	0.5%	1/10W	

D1

REF. NO.	PART.NO	DESCRIPTION	REMARK
R6441	1-208-806-11	METAL CHIP 10K 0.5% 1/10W	
R6442	1-216-039-00	RES-CHIP 390 5% 1/10W	
R6455	1-216-295-11	SHORT 0	
R6456	1-216-097-11	RES-CHIP 100K 5% 1/10W	
R6457	1-216-075-00	RES-CHIP 12K 5% 1/10W	
R6458	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R6459	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R6460	1-249-393-11	CARBON 10 5% 1/4W	
R6461	1-249-411-11	CARBON 330 5% 1/4W	
R6462	1-249-406-11	CARBON 120 5% 1/4W	
R6463	1-216-095-00	RES-CHIP 82K 5% 1/10W	
R6464	1-216-079-00	RES-CHIP 18K 5% 1/10W	

D1 Board Variant Parts KV-28FX65

< CAPACITOR >

C6130	1-163-259-91	CERAMIC CHIP 220PF 5.00% 50V	
C6134	1-102-508-91	CERAMIC 10PF 0.50PF 50V	
C6209	1-163-133-00	CERAMIC CHIP 470PF 5.00% 50V	
C6251	1-163-989-11	CERAMIC CHIP 0.033UF 10.00% 25V	
C6252	1-163-989-11	CERAMIC CHIP 0.033UF 10.00% 25V	
C6420	1-136-165-00	FILM 0.1UF 5.00% 50V	
C6421	1-136-165-00	FILM 0.1UF 5.00% 50V	

< IC >

IC6250	8-759-595-52	IC CXA8070AP	

< RESISTOR >

R6107	1-216-657-11	METAL CHIP 1.8K 0.5% 1/10W	
R6108	1-216-657-11	METAL CHIP 1.8K 0.5% 1/10W	
R6127	1-208-790-11	METAL CHIP 2.2K 0.5% 1/10W	
R6130	1-218-768-11	METAL CHIP 470K 0.5% 1/10W	
R6141	1-208-814-91	METAL CHIP 22K 0.5% 1/10W	
R6142	1-216-670-11	METAL CHIP 6.2K 0.5% 1/10W	
R6144	1-216-105-91	RES-CHIP 220K 5% 1/10W	
R6145	1-216-053-00	RES-CHIP 1.5K 5% 1/10W	
R6154	1-216-067-00	RES-CHIP 5.6K 5% 1/10W	
R6158	1-208-790-11	METAL CHIP 2.2K 0.5% 1/10W	
R6159	1-208-790-11	METAL CHIP 2.2K 0.5% 1/10W	
R6161	1-208-802-11	METAL CHIP 6.8K 0.5% 1/10W	
R6174	1-216-075-00	RES-CHIP 12K 5% 1/10W	
R6175	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	
R6176	1-216-295-11	SHORT 0	
R6179	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	
R6186	1-216-045-00	RES-CHIP 680 5% 1/10W	
R6189	1-216-059-00	RES-CHIP 2.7K 5% 1/10W	
R6192	1-208-814-91	METAL CHIP 22K 0.5% 1/10W	
R6193	1-163-251-11	CERAMIC CHIP 100PF 5.00% 50V	
R6198	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R6200	1-216-695-11	METAL CHIP 68K 0.5% 1/10W	
R6206	1-216-107-00	RES-CHIP 270K 5% 1/10W	
R6207	1-216-113-00	RES-CHIP 470K 5% 1/10W	
R6215	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	
R6265	1-216-101-00	RES-CHIP 150K 5% 1/10W	
R6268	1-216-081-00	RES-CHIP 22K 5% 1/10W	
R6276	1-216-677-11	METAL CHIP 12K 0.5% 1/10W	
R6277	1-216-677-11	METAL CHIP 12K 0.5% 1/10W	
R6284	1-216-113-00	RES-CHIP 470K 5% 1/10W	
R6286	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R6287	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R6370	1-208-806-11	METAL CHIP 10K 0.5% 1/10W	
R6399	1-218-756-11	METAL CHIP 150K 0.5% 1/10W	
R6400	1-208-806-11	METAL CHIP 10K 0.5% 1/10W	
R6428	1-216-103-00	RES-CHIP 180K 5% 1/10W	
R6431	1-216-115-00	RES-CHIP 560K 5% 1/10W	

D1 Board Variant Parts KV-32FX65

< CAPACITOR >

C6209	1-163-251-11	CERAMIC CHIP 100PF 5.00% 50V	
C6251	1-216-295-11	SHORT 0	(KV-32FX65B/32FX65E/32FX65K)
	1-163-989-11	CERAMIC CHIP 0.033UF 10.00% 25V	(KV-32FX65U)
C6252	1-163-989-11	CERAMIC CHIP 0.033UF 10.00% 25V	
C6420	1-136-165-00	FILM 0.1UF 5.00% 50V	(KV-32FX65U)
C6421	1-136-165-00	FILM 0.1UF 5.00% 50V	(KV-32FX65U)

< IC >

IC6250	8-759-478-66	IC CXA8070P	(KV-32FX65B/32FX65E/32FX65K)
	8-759-595-52	IC CXA8070AP	(KV-32FX65U)

< RESISTOR >

R6107	1-208-790-11	METAL CHIP 2.2K 0.5% 1/10W	
R6108	1-208-790-11	METAL CHIP 2.2K 0.5% 1/10W	
R6127	1-216-663-11	METAL CHIP 3.3K 0.5% 1/10W	
R6130	1-218-769-11	METAL CHIP 510K 0.5% 1/10W	
R6141	1-216-679-91	METAL CHIP 15K 0.5% 1/10W	
R6142	1-208-798-11	METAL CHIP 4.7K 0.5% 1/10W	
R6144	1-216-099-00	RES-CHIP 120K 5% 1/10W	
R6145	1-216-055-00	RES-CHIP 1.8K 5% 1/10W	
R6154	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R6158	1-208-798-11	METAL CHIP 4.7K 0.5% 1/10W	

REF. NO.	PART.NO	DESCRIPTION	REMARK
R6159	1-216-295-11	SHORT 0	
R6161	1-216-673-11	METAL CHIP 8.2K 0.5%	1/10W
R6174	1-216-081-00	RES-CHIP 22K 5%	1/10W
R6175	1-216-069-00	RES-CHIP 6.8K 5%	1/10W
R6176	1-216-071-00	RES-CHIP 8.2K 5%	1/10W
R6179	1-216-295-11	SHORT 0	
R6186	1-216-063-91	RES-CHIP 3.9K 5%	1/10W
R6189	1-216-295-11	SHORT 0	
R6192	1-208-806-11	METAL CHIP 10K 0.5%	1/10W
R6198	1-216-081-11	RES-CHIP 22K 5%	1/10W
R6206	1-216-105-91	RES-CHIP 220K 5%	1/10W
R6207	1-216-105-91	RES-CHIP 220K 5%	1/10W
R6215	1-216-089-11	RES-CHIP 47K 5%	1/10W
R6265	1-216-105-91	RES-CHIP 220K 5%	1/10W
R6266	1-216-113-00	RES-CHIP 470K 5%	1/10W
R6268	1-216-093-00	RES-CHIP 68K 5%	1/10W
R6276	1-216-686-11	METAL CHIP 30K 0.5%	1/10W
R6277	1-216-686-11	METAL CHIP 30K 0.5%	1/10W
R6284	1-216-109-00	RES-CHIP 330K 5%	1/10W
R6286	1-216-071-00	RES-CHIP 8.2K 5%	1/10W
R6287	1-216-081-00	RES-CHIP 22K 5%	1/10W
R6370	1-216-677-11	METAL CHIP 12K 0.5%	1/10W
R6399	1-216-695-11	METAL CHIP 68K 0.5%	1/10W
R6400	1-216-677-11	METAL CHIP 12K 0.5%	1/10W
R6428	1-216-101-00	RES-CHIP 150K 5%	1/10W
R6431	1-216-113-00	RES-CHIP 470K 5%	1/10W

*A-1640-383-A E Board, Complete (KV-28FX65)
*A-1640-381-A E Board, Complete (KV-32FX65B/32FX65E/32FX65K)
*A-1640-384-A E Board, Complete (KV-32FX65U)

E Board, Common Parts

< CAPACITOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
C4316	1-104-664-11	ELECT 47UF	20.00% 25V
C4317	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4318	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4319	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4320	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4321	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4322	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4324	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4325	1-163-227-11	CERAMIC CHIP 10PF	0.50PF 50V
C4329	1-126-963-11	ELECT 4.7UF	20.00% 50V
C4330	1-137-581-11	FILM 0.1UF	5.00% 100V
C4331	1-126-959-11	ELECT 0.47UF	20.00% 50V
C4332	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4333	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4334	1-126-967-11	ELECT 47UF	20.00% 50V
C4336	1-126-967-11	ELECT 47UF	20.00% 50V
C4338	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4340	1-126-967-11	ELECT 47UF	20.00% 50V
C4342	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
C4343	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4344	1-163-809-11	CERAMIC CHIP 0.047UF	10.00% 25V
C4345	1-126-967-11	ELECT 47UF	20.00% 50V
C4346	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4347	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4348	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4349	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4350	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4351	1-163-009-11	CERAMIC CHIP 0.001UF	10.00% 50V
C4352	1-126-967-11	ELECT 47UF	20.00% 50V
C4353	1-107-823-11	CERAMIC CHIP 0.47UF	10.00% 16V
C4354	1-107-823-11	CERAMIC CHIP 0.47UF	10.00% 16V
C4355	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4356	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4357	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4358	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4359	1-164-161-11	CERAMIC CHIP 0.0022UF	10.00% 50V
C4360	1-126-963-11	ELECT 4.7UF	20.00% 50V
C4362	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4363	1-126-967-11	ELECT 47UF	20.00% 50V
C4364	1-126-967-11	ELECT 47UF	20.00% 50V
C4366	1-163-059-91	CERAMIC CHIP 0.01UF	10.00% 50V
C4367	1-104-760-11	CERAMIC CHIP 0.047UF	10.00% 50V
C4369	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4370	1-126-967-11	ELECT 47UF	20.00% 50V
C4371	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C4377	1-126-960-11	ELECT 1UF	20.00% 50V
C4519	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V

< CONNECTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
CN4101	1-695-301-11	CONNECTOR, BOARD TO BOARD 40P	
CN4500	*1-564-511-11	PLUG, CONNECTOR 8P	
CN4502	*1-564-506-11	PLUG, CONNECTOR 3P	

< DIODE >

REF. NO.	PART.NO	DESCRIPTION	REMARK
D4304	8-719-923-60	DIODE MTZJ-T-77-9.1	
D4305	8-719-923-60	DIODE MTZJ-T-77-9.1	
D4311	8-719-914-43	DIODE DAN202K-T-146	
D4312	8-719-914-43	DIODE DAN202K-T-146	

E

REF. NO.	PART.NO	DESCRIPTION	REMARK
D4313	8-719-401-63	DIODE MA3062M-TX	

< FERRITE BEAD >

REF. NO.	PART.NO	DESCRIPTION	REMARK
FB4387	1-414-234-22	INDUCTOR CHIP 0UH	
FB4388	1-414-234-22	INDUCTOR CHIP 0UH	
FB4389	1-414-234-22	INDUCTOR CHIP 0UH	

< IC >

REF. NO.	PART.NO	DESCRIPTION	REMARK
IC4301	8-752-090-88	IC CXA2100AQ-TL	

< COIL >

REF. NO.	PART.NO	DESCRIPTION	REMARK
L4301	1-414-183-41	INDUCTOR 10UH	
L4302	1-414-183-41	INDUCTOR 10UH	
L4303	1-414-183-41	INDUCTOR 10UH	
L4304	1-414-183-41	INDUCTOR 10UH	
L4305	1-414-183-41	INDUCTOR 10UH	
L4306	1-414-183-41	INDUCTOR 10UH	
L4308	1-414-186-31	INDUCTOR 33UH	
L4309	1-414-186-31	INDUCTOR 33UH	

< TRANSISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
Q4304	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q4307	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q4308	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q4309	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q4310	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q4311	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q4312	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q4313	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q4315	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q4316	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q4317	8-729-900-53	TRANSISTOR DTC114EKA-T146	

< RESISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
R4301	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4302	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4303	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4304	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4305	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4306	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4307	1-216-045-00	RES-CHIP 680 5% 1/10W	
R4308	1-216-045-00	RES-CHIP 680 5% 1/10W	
R4309	1-216-045-00	RES-CHIP 680 5% 1/10W	
R4313	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	
R4314	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R4331	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R4332	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R4333	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R4334	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4335	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4336	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4337	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4339	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R4340	1-216-111-00	RES-CHIP 390K 5% 1/10W	
R4341	1-216-295-11	SHORT 0	
R4343	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4344	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4345	1-216-677-11	METAL CHIP 12K 0.5% 1/10W	
R4346	1-216-681-11	METAL CHIP 18K 0.5% 1/10W	
R4347	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4348	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4350	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4354	1-208-806-11	METAL CHIP 10K 0.5% 1/10W	
R4355	1-216-009-91	RES-CHIP 22 5% 1/10W	
R4356	1-216-009-91	RES-CHIP 22 5% 1/10W	
R4357	1-216-009-91	RES-CHIP 22 5% 1/10W	
R4358	1-216-071-00	RES-CHIP 8.2K 5% 1/10W	
R4359	1-216-041-00	RES-CHIP 470 5% 1/10W	
R4360	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R4361	1-216-133-00	RES-CHIP 3.3M 5% 1/10W	
R4363	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4365	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4366	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4367	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4370	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R4371	1-216-069-00	RES-CHIP 6.8K 5% 1/10W	
R4372	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R4373	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R4374	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R4375	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R4376	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R4377	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R4378	1-216-101-00	RES-CHIP 150K 5% 1/10W	
R4379	1-216-091-00	RES-CHIP 56K 5% 1/10W	
R4380	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R4382	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R4384	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4387	1-216-031-00	RES-CHIP 180 5% 1/10W	
R4388	1-216-031-00	RES-CHIP 180 5% 1/10W	
R4389	1-216-031-00	RES-CHIP 180 5% 1/10W	
R4394	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4395	1-216-295-11	SHORT 0	
R4396	1-216-295-11	SHORT 0	

REF. NO.	PART.NO	DESCRIPTION	REMARK
R4398	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4399	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4518	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4519	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R4520	1-216-295-11	SHORT 0	
R4521	1-216-295-11	SHORT 0	
R4522	1-216-073-00	RES-CHIP 10K 5% 1/10W	
		< CRYSTAL >	
X4300	1-767-127-11	VIBRATOR, CERAMIC	

E Board Variant Parts KV-28FX65

REF. NO.	PART.NO	DESCRIPTION	REMARK
		< CAPACITOR >	
C4379	1-163-243-11	CERAMIC CHIP 47PF 5.00% 50V	
		< RESISTOR >	
R4383	1-216-079-00	RES-CHIP 18K 5% 1/10W	
R4401	1-216-105-91	RES-CHIP 220K 5% 1/10W	
R4404	1-216-073-00	RES-CHIP 10K 5% 1/10W	

E Board Variant Parts KV-32FX65

REF. NO.	PART.NO	DESCRIPTION	REMARK
		< CAPACITOR >	
C4379	1-163-243-11	CERAMIC CHIP 47PF 5.00% 50V	(KV-32FX65U)
C4380	1-163-017-00	CERAMIC CHIP 0.0047UF 10.00% 50V	(KV-32FX65U)
C4518	1-162-638-11	CERAMIC CHIP 1UF 16V	(KV-32FX65B/32FX65E/32FX65K)
		< TRANSISTOR >	
Q4318	8-719-026-49	TRANSISTOR 2SA1037AK-T146-R	(KV-32FX65U)
		< RESISTOR >	
R4381	1-216-125-00	RES-CHIP 1.5K 5% 1/10W	(KV-32FX65B/32FX65E/32FX65K)
R4383	1-216-089-11	RES-CHIP 47K 5% 1/10W	(KV-32FX65B/32FX65E/32FX65K)
	1-216-079-00	RES-CHIP 18K 5% 1/10W	(KV-32FX65U)
R4401	1-216-107-00	RES-CHIP 270K 5% 1/10W	(KV-32FX65B/32FX65E/32FX65K)
	1-216-105-91	RES-CHIP 220K 5% 1/10W	(KV-32FX65U)
R4403	1-216-073-00	RES-CHIP 10K 5% 1/10W	(KV-32FX65U)
R4404	1-216-073-00	RES-CHIP 10K 5% 1/10W	(KV-32FX65U)
R4405	1-216-689-11	RES-CHIP 39K 5% 1/10W	(KV-32FX65U)
R4406	1-216-105-91	RES-CHIP 220K 5% 1/10W	(KV-32FX65U)
R4407	1-216-091-91	RES-CHIP 56K 5% 1/10W	(KV-32FX65U)
R4507	1-216-129-91	RES-CHIP 2.2M 5% 1/10W	(KV-32FX65B/E/K)

*A-1646-229-A H8 Board, Complete (KV-28FX65/32FX65U)

*A-1646-217-A H8 Board, Complete (KV-32FX65B/32FX65E/32FX65K)

H8 Board, Common Parts

REF. NO.	PART.NO	DESCRIPTION	REMARK
	4-205-711-01	HOLDER, LED	
	8-719-109-89	DIODE MTZJ-T-77-5.6B	
		< CAPACITOR >	
C7150	1-126-969-11	ELECT 220UF 20.00% 50V	
		< CONNECTOR >	
CN7150	*1-564-519-11	PLUG, CONNECTOR 4P	
		< DIODE >	
D7150	8-719-081-56	DIODE L-59SRGC-CC	
		< IC >	
IC7150	8-749-014-59	IC TSOP1740KS1	
		< RESISTOR >	
R7150	1-249-409-11	CARBON 220 5% 1/4W	
R7151	1-249-411-11	CARBON 330 5% 1/4W	

H8 Board Variant Parts KV-28FX65

REF. NO.	PART.NO	DESCRIPTION	REMARK
		< DIODE >	
D7152	8-719-923-38	DIODE MTZJ-T-77-5.6B	
		< TRANSISTOR >	
Q7150	8-729-029-57	TRANSISTOR DTA144ESA-TP	
		< RESISTOR >	
R7152	1-535-465-11	LEAD, JUMPER (5.0MM)	
R7153	1-249-425-11	CARBON 4.7K 5% 1/4W	
R7154	1-247-817-91	CARBON 270 5% 1/4W	

H8 Board Variant Parts KV-32FX65

< DIODE >

REF. NO.	PART.NO	DESCRIPTION	REMARK
D7152	8-719-923-38	DIODE MTZJ-T-77-5.6B	(KV-32FX65U)

< TRANSISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
Q7150	8-729-029-57	TRANSISTOR DTA144ESA-TP	(KV-32FX65U)

< RESISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
R7152	1-535-465-11	LEAD, JUMPER (5.0MM)	(KV-32FX65U)
R7153	1-247-817-91	CARBON 4.7K 5% 1/4W	(KV-32FX65U)
R7154	1-247-817-91	CARBON 270 5% 1/4W	(KV-32FX65U)

*A-1651-142-A J Board, Complete (KV-28FX65/32FX65U)
*A-1651-137-A J Board, Complete (KV-32FX65B/32FX65E/32FX65K)

J Board, Common Parts

< CAPACITOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
C8105	1-126-933-11	ELECT 100UF 20.00% 16V	
C8106	1-126-933-11	ELECT 100UF 20.00% 16V	
C8107	1-126-935-11	ELECT 470UF 20.00% 16V	
C8108	1-126-933-11	ELECT 100UF 20.00% 16V	
C8109	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C8110	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C8111	1-126-933-11	ELECT 100UF 20.00% 16V	
C8112	1-107-715-11	ELECT 22UF 20.00% 16V	
C8144	1-107-823-11	CERAMIC CHIP 0.47UF 10.00% 16V	
C8145	1-107-823-11	CERAMIC CHIP 0.47UF 10.00% 16V	
C8200	1-104-664-11	ELECT 47UF 20.00% 16V	
C8201	1-163-241-11	CERAMIC CHIP 39PF 5.00% 50V	
C8202	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C8203	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C8204	1-164-506-11	CERAMIC CHIP 4.7UF 16V	
C8205	1-165-319-11	CERAMIC CHIP 0.1UF 50V	
C8208	1-164-506-11	CERAMIC CHIP 4.7UF 16V	
C8209	1-163-251-11	CERAMIC CHIP 100PF 5.00% 50V	
C8210	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C8211	1-163-243-11	CERAMIC CHIP 47PF 5.00% 50V	
C8212	1-163-243-11	CERAMIC CHIP 47PF 5.00% 50V	
C8213	1-163-087-00	CERAMIC CHIP 4PF 0.25PF 50V	
C8214	1-163-087-00	CERAMIC CHIP 4PF 0.25PF 50V	
C8215	1-163-243-11	CERAMIC CHIP 47PF 5.00% 50V	
C8216	1-126-933-11	ELECT 100UF 20.00% 16V	
C8217	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C8218	1-126-964-11	ELECT 10UF 20.00% 50V	
C8219	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C8220	1-126-964-11	ELECT 10UF 20.00% 50V	
C8221	1-104-664-11	ELECT 47UF 20.00% 16V	
C8222	1-104-664-11	ELECT 47UF 20.00% 16V	
C8223	1-104-664-11	ELECT 47UF 20.00% 16V	
C8224	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C8225	1-104-664-11	ELECT 47UF 20.00% 16V	
C8227	1-163-009-11	CERAMIC CHIP 0.001UF 10.00% 50V	
C8228	1-163-009-11	CERAMIC CHIP 0.001UF 10.00% 50V	
C8229	1-163-009-11	CERAMIC CHIP 0.001UF 10.00% 50V	
C8230	1-163-009-11	CERAMIC CHIP 0.001UF 10.00% 50V	
C8231	1-163-009-11	CERAMIC CHIP 0.001UF 10.00% 50V	
C8232	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C8233	1-104-664-11	ELECT 47UF 20.00% 16V	
C8234	1-107-823-11	CERAMIC CHIP 0.47UF 10.00% 16V	
C8235	1-107-823-11	CERAMIC CHIP 0.47UF 10.00% 16V	
C8236	1-126-933-11	ELECT 100UF 20.00% 16V	
C8237	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C8238	1-164-505-11	CERAMIC CHIP 2.2UF 16V	
C8239	1-107-823-11	CERAMIC CHIP 0.47UF 10.00% 16V	
C8240	1-107-823-11	CERAMIC CHIP 0.47UF 10.00% 16V	
C8241	1-126-964-11	ELECT 10UF 20.00% 50V	
C8242	1-104-664-11	ELECT 47UF 20.00% 16V	
C8301	1-163-037-11	CERAMIC CHIP 0.022UF 10.00% 50V	
C8302	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C8303	1-126-933-11	ELECT 100UF 20.00% 16V	
C8304	1-115-340-11	CERAMIC CHIP 0.22UF 10.00% 25V	
C8305	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C8306	1-107-823-11	CERAMIC CHIP 0.47UF 10.00% 16V	
C8307	1-115-340-11	CERAMIC CHIP 0.22UF 10.00% 25V	
C8308	1-115-340-11	CERAMIC CHIP 0.22UF 10.00% 25V	
C8309	1-126-961-11	ELECT 2.2UF 20.00% 50V	
C8311	1-104-664-11	ELECT 47UF 20.00% 16V	
C8313	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C8314	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C8318	1-104-664-11	ELECT 47UF 20.00% 16V	
C8321	1-104-664-11	ELECT 47UF 20.00% 16V	
C8322	1-163-227-11	CERAMIC CHIP 10PF 0.50PF 50V	
C8323	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C8324	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C8325	1-126-964-11	ELECT 10UF 20.00% 50V	
C8326	1-104-664-11	ELECT 47UF 20.00% 16V	
C8328	1-104-664-11	ELECT 47UF 20.00% 16V	
C8329	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C8335	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	

J

REF. NO.	PART.NO	DESCRIPTION	REMARK
C8336	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8337	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8338	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8345	1-164-346-11	CERAMIC CHIP 1UF	16V
C8346	1-126-963-11	ELECT 4.7UF	20.00% 50V
C8601	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C8602	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C8605	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C8606	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C8607	1-104-664-11	ELECT 47UF	20.00% 16V
C8608	1-104-664-11	ELECT 47UF	20.00% 16V
C8609	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C8610	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C8611	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C8612	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C8613	1-104-664-11	ELECT 47UF	20.00% 16V
C8614	1-104-664-11	ELECT 47UF	20.00% 16V
C8804	1-126-933-11	ELECT 100UF	20.00% 16V
C8812	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
C8814	1-104-664-11	ELECT 47UF	20.00% 25V
C8822	1-126-933-11	ELECT 100UF	20.00% 16V
C8825	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C8826	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C8827	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8828	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8829	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8830	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8831	1-126-964-11	ELECT 10UF	20.00% 50V
C8832	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8833	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8834	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8835	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8836	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8837	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8838	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8839	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C8840	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8841	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8842	1-104-664-11	ELECT 47UF	20.00% 16V
C8843	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8844	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
C8846	1-126-933-11	ELECT 100UF	20.00% 16V
C8847	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8849	1-164-346-11	CERAMIC CHIP 1UF	16V
C8850	1-164-346-11	CERAMIC CHIP 1UF	16V
C8851	1-126-967-11	ELECT 47UF	20.00% 50V
C8852	1-164-346-11	CERAMIC CHIP 1UF	16V

REF. NO.	PART.NO	DESCRIPTION	REMARK
C8853	1-126-967-11	ELECT 47UF	20.00% 50V
C8854	1-164-346-11	CERAMIC CHIP 1UF	16V
C8855	1-164-346-11	CERAMIC CHIP 1UF	16V
C8856	1-164-346-11	CERAMIC CHIP 1UF	16V
C8857	1-164-346-11	CERAMIC CHIP 1UF	16V
C8858	1-164-346-11	CERAMIC CHIP 1UF	16V
C8859	1-164-346-11	CERAMIC CHIP 1UF	16V
C8860	1-164-346-11	CERAMIC CHIP 1UF	16V
C8861	1-164-346-11	CERAMIC CHIP 1UF	16V
C8862	1-164-346-11	CERAMIC CHIP 1UF	16V
C8863	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8864	1-164-346-11	CERAMIC CHIP 1UF	16V
C8865	1-104-664-11	ELECT 47UF	20.00% 16V
C8866	1-164-346-11	CERAMIC CHIP 1UF	16V
C8867	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8868	1-126-964-11	ELECT 10UF	20.00% 50V
C8869	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8896	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C8897	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C8898	1-163-227-11	CERAMIC CHIP 10PF	0.50PF 50V
C8899	1-163-227-11	CERAMIC CHIP 10PF	0.50PF 50V
C8900	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C8901	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C8902	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C8903	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C8904	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C8905	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C8906	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C8907	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C8908	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C8909	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C8910	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C8911	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C8914	1-126-933-11	ELECT 100UF	20.00% 16V
C8977	1-163-009-11	CERAMIC CHIP 0.001UF	10.00% 50V
C8978	1-163-009-11	CERAMIC CHIP 0.001UF	10.00% 50V

< FILTER >

REF. NO.	PART.NO	DESCRIPTION	REMARK
CF8200	1-409-327-00	TRAP, CERAMIC (6.5MHZ)	

< CONNECTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
CN8101	1-695-302-11	CONNECTOR, BOARD TO BOARD 50P	
CN8900	1-561-534-41	SOCKET, PIN 21P	
CN8901	1-695-293-11	SOCKET 21P	
CN8902	1-695-293-11	SOCKET 21P	

J

< DIODE >

REF. NO.	PART.NO	DESCRIPTION	REMARK
D8153	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D8200	8-719-158-49	DIODE UDZ-TE-17-12B	
D8201	8-719-158-49	DIODE UDZ-TE-17-12B	
D8202	8-719-158-49	DIODE UDZ-TE-17-12B	
D8203	8-719-158-49	DIODE UDZ-TE-17-12B	
D8801	8-719-158-49	DIODE UDZ-TE-17-12B	
D8802	8-719-158-49	DIODE UDZ-TE-17-12B	
D8803	8-719-158-49	DIODE UDZ-TE-17-12B	
D8804	8-719-158-49	DIODE UDZ-TE-17-12B	
D8805	8-719-158-49	DIODE UDZ-TE-17-12B	
D8806	8-719-158-49	DIODE UDZ-TE-17-12B	
D8807	8-719-158-49	DIODE UDZ-TE-17-12B	
D8808	8-719-158-49	DIODE UDZ-TE-17-12B	
D8809	8-719-158-49	DIODE UDZ-TE-17-12B	
D8810	8-719-158-49	DIODE UDZ-TE-17-12B	
D8811	8-719-158-49	DIODE UDZ-TE-17-12B	
D8812	8-719-158-49	DIODE UDZ-TE-17-12B	
D8813	8-719-158-49	DIODE UDZ-TE-17-12B	
D8814	8-719-158-49	DIODE UDZ-TE-17-12B	
D8900	8-719-056-85	DIODE UDZS-TE-17-8.2B	
D8901	8-719-158-49	DIODE UDZ-TE-17-12B	
D8902	8-719-056-85	DIODE UDZS-TE-17-8.2B	
D8903	8-719-056-85	DIODE UDZS-TE-17-8.2B	
D8904	8-719-056-85	DIODE UDZS-TE-17-8.2B	
D8905	8-719-056-85	DIODE UDZS-TE-17-8.2B	
D8906	8-719-056-85	DIODE UDZS-TE-17-8.2B	
D8907	8-719-158-49	DIODE UDZ-TE-17-12B	
D8909	8-719-056-85	DIODE UDZS-TE-17-8.2B	
D8910	8-719-056-85	DIODE UDZS-TE-17-8.2B	
D8911	8-719-056-85	DIODE UDZS-TE-17-8.2B	
D8912	8-719-158-49	DIODE UDZ-TE-17-12B	
D8913	8-719-158-49	DIODE UDZ-TE-17-12B	
D8914	8-719-158-49	DIODE UDZ-TE-17-12B	
D8915	8-719-158-49	DIODE UDZ-TE-17-12B	

< FILTER >

REF. NO.	PART.NO	DESCRIPTION	REMARK
FL8200	1-236-071-11	ENCAPSULATED COMPONENT	
FL8201	1-233-764-21	FILTER	
FL8203	1-236-071-11	ENCAPSULATED COMPONENT	
FL8302	1-236-071-11	ENCAPSULATED COMPONENT	
FL8304	1-236-071-11	ENCAPSULATED COMPONENT	
FL8308	1-236-071-11	ENCAPSULATED COMPONENT	
FL8801	1-236-071-11	ENCAPSULATED COMPONENT	
FL8802	1-236-071-11	ENCAPSULATED COMPONENT	

< IC >

REF. NO.	PART.NO	DESCRIPTION	REMARK
IC8101	8-759-576-76	IC TDA2822D013TR	
IC8151	8-752-072-94	IC CXA1875AM-T4	
IC8200	8-759-654-42	IC MSP3410D-C5QA-B4	
IC8201	8-759-701-36	IC MC3403NS-E20	
IC8202	8-759-908-15	IC TL431CZ	
IC8301	8-752-096-06	IC CXA2163Q-T6	
IC8302	8-759-485-79	IC TC7SET08FU(TE85R)	
IC8601	8-759-182-88	IC PQ09TZ5U	
IC8602	8-759-576-72	IC LF50CDT-TR	
IC8603	8-759-576-72	IC LF50CDT-TR	
IC8604	8-759-576-72	IC LF50CDT-TR	
IC8801	8-752-096-83	IC CXA2149AQ-TL	

< SOCKET >

REF. NO.	PART.NO	DESCRIPTION	REMARK
J8901	1-774-747-11	JACK BLOCK, PIN	

< COIL >

REF. NO.	PART.NO	DESCRIPTION	REMARK
L8150	1-414-757-11	INDUCTOR 100UH	
L8200	1-412-006-31	INDUCTOR CHIP 10UH	
L8201	1-412-064-11	INDUCTOR CHIP 100UH	

< TRANSISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
Q8100	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q8101	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q8156	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q8157	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q8200	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q8201	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q8202	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q8303	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q8305	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q8306	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q8308	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q8309	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q8310	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q8809	8-729-216-22	TRANSISTOR 2SA1037K-T-146-R	
Q8817	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q8818	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q8819	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q8901	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q8902	8-729-216-22	TRANSISTOR 2SA1037K-T-146-R	

< RESISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
R8103	1-216-075-00	RES-CHIP 12K 5% 1/10W	
R8104	1-216-075-00	RES-CHIP 12K 5% 1/10W	

REF. NO.	PART.NO	DESCRIPTION	REMARK
R8105	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R8106	1-216-081-00	RES-CHIP 22K 5% 1/10W	
R8107	1-216-081-00	RES-CHIP 22K 5% 1/10W	
R8108	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R8109	1-249-389-11	CARBON 4.7 5% 1/4W	
R8110	1-249-389-11	CARBON 4.7 5% 1/4W	
R8111	1-216-033-00	RES-CHIP 220 5% 1/10W	
R8112	1-216-033-00	RES-CHIP 220 5% 1/10W	
R8115	1-216-029-00	RES-CHIP 150 5% 1/10W	
R8116	1-216-029-00	RES-CHIP 150 5% 1/10W	
R8117	1-216-029-00	RES-CHIP 150 5% 1/10W	
R8118	1-216-029-00	RES-CHIP 150 5% 1/10W	
R8165	1-216-295-11	SHORT 0	
R8167	1-216-025-11	RES-CHIP 100 5% 1/10W	
R8168	1-216-025-11	RES-CHIP 100 5% 1/10W	
R8174	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	
R8175	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	
R8178	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R8200	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R8201	1-216-295-11	SHORT 0	
R8202	1-216-021-00	RES-CHIP 68 5% 1/10W	
R8203	1-216-069-00	RES-CHIP 6.8K 5% 1/10W	
R8204	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R8205	1-216-069-00	RES-CHIP 6.8K 5% 1/10W	
R8206	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R8208	1-216-037-00	RES-CHIP 330 5% 1/10W	
R8209	1-208-790-11	METAL CHIP 2.2K 0.5% 1/10W	
R8210	1-216-025-11	RES-CHIP 100 5% 1/10W	
R8211	1-216-295-11	SHORT 0	
R8212	1-216-295-11	SHORT 0	
R8213	1-216-295-11	SHORT 0	
R8216	1-216-025-11	RES-CHIP 100 5% 1/10W	
R8217	1-216-025-11	RES-CHIP 100 5% 1/10W	
R8218	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R8219	1-216-025-11	RES-CHIP 100 5% 1/10W	
R8220	1-216-025-11	RES-CHIP 100 5% 1/10W	
R8221	1-216-025-11	RES-CHIP 100 5% 1/10W	
R8222	1-216-295-11	SHORT 0	
R8223	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8224	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8225	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8226	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8227	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8228	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8229	1-216-295-11	SHORT 0	
R8230	1-216-081-00	RES-CHIP 22K 5% 1/10W	
R8231	1-216-089-11	RES-CHIP 47K 5% 1/10W	

REF. NO.	PART.NO	DESCRIPTION	REMARK
R8232	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8233	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8234	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8235	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8236	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8237	1-216-043-91	RES-CHIP 560 5% 1/10W	
R8238	1-216-063-91	RES-CHIP 3.9K 5% 1/10W	
R8239	1-216-069-00	RES-CHIP 6.8K 5% 1/10W	
R8240	1-208-782-11	METAL CHIP 1K 0.5% 1/10W	
R8243	1-216-021-00	RES-CHIP 68 5% 1/10W	
R8300	1-216-295-11	SHORT 0	
R8302	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8306	1-216-083-00	RES-CHIP 27K 5% 1/10W	
R8308	1-216-039-00	RES-CHIP 390 5% 1/10W	
R8310	1-216-037-00	RES-CHIP 330 5% 1/10W	
R8312	1-216-091-00	RES-CHIP 56K 5% 1/10W	
R8313	1-216-081-00	RES-CHIP 22K 5% 1/10W	
R8314	1-216-295-11	SHORT 0	
R8315	1-216-121-11	RES-CHIP 1M 5% 1/10W	
R8316	1-216-037-00	RES-CHIP 330 5% 1/10W	
R8317	1-216-295-11	SHORT 0	
R8318	1-216-295-11	SHORT 0	
R8319	1-216-295-11	SHORT 0	
R8320	1-216-041-00	RES-CHIP 470 5% 1/10W	
R8322	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R8323	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8324	1-216-041-00	RES-CHIP 470 5% 1/10W	
R8326	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8328	1-216-025-11	RES-CHIP 100 5% 1/10W	
R8329	1-216-025-11	RES-CHIP 100 5% 1/10W	
R8330	1-216-041-00	RES-CHIP 470 5% 1/10W	
R8331	1-216-041-00	RES-CHIP 470 5% 1/10W	
R8332	1-216-041-00	RES-CHIP 470 5% 1/10W	
R8333	1-216-041-00	RES-CHIP 470 5% 1/10W	
R8334	1-216-041-00	RES-CHIP 470 5% 1/10W	
R8336	1-216-041-00	RES-CHIP 470 5% 1/10W	
R8337	1-216-041-00	RES-CHIP 470 5% 1/10W	
R8338	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8339	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8340	1-216-063-91	RES-CHIP 3.9K 5% 1/10W	
R8341	1-216-041-00	RES-CHIP 470 5% 1/10W	
R8344	1-216-091-00	RES-CHIP 56K 5% 1/10W	
R8345	1-216-079-00	RES-CHIP 18K 5% 1/10W	
R8346	1-216-091-00	RES-CHIP 56K 5% 1/10W	
R8347	1-216-079-00	RES-CHIP 18K 5% 1/10W	
R8806	1-216-085-00	RES-CHIP 33K 5% 1/10W	
R8807	1-216-089-11	RES-CHIP 47K 5% 1/10W	

J

REF. NO.	PART.NO	DESCRIPTION	REMARK
R8820	1-216-295-11	SHORT 0	
R8826	1-216-051-00	RES-CHIP 1.2K 5% 1/10W	
R8836	1-216-025-11	RES-CHIP 100 5% 1/10W	
R8846	1-216-295-11	SHORT 0	
R8854	1-216-029-00	RES-CHIP 150 5% 1/10W	
R8855	1-216-031-00	RES-CHIP 180 5% 1/10W	
R8856	1-216-055-00	RES-CHIP 1.8K 5% 1/10W	
R8857	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8858	1-216-079-00	RES-CHIP 18K 5% 1/10W	
R8859	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R8861	1-216-295-11	SHORT 0	
R8863	1-216-295-11	SHORT 0	
R8865	1-216-022-00	RES-CHIP 75 5% 1/10W	
R8866	1-216-022-00	RES-CHIP 75 5% 1/10W	
R8867	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R8868	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8869	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8871	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R8872	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R8873	1-216-113-00	RES-CHIP 470K 5% 1/10W	
R8874	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R8875	1-216-113-00	RES-CHIP 470K 5% 1/10W	
R8876	1-216-093-91	RES-CHIP 68K 5% 1/10W	
R8877	1-216-093-91	RES-CHIP 68K 5% 1/10W	
R8878	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R8879	1-208-820-11	METAL CHIP 39K 0.5% 1/10W	
R8880	1-216-295-11	SHORT 0	
R8881	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8882	1-216-079-00	RES-CHIP 18K 5% 1/10W	
R8883	1-208-776-11	METAL CHIP 560 0.5% 1/10W	
R8885	1-208-776-11	METAL CHIP 560 0.5% 1/10W	
R8888	1-216-033-00	RES-CHIP 220 5% 1/10W	
R8889	1-216-033-00	RES-CHIP 220 5% 1/10W	
R8890	1-216-295-11	SHORT 0	
R8892	1-216-295-11	SHORT 0	
R8893	1-216-295-11	SHORT 0	
R8900	1-216-039-00	RES-CHIP 390 5% 1/10W	
R8901	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R8902	1-216-039-00	RES-CHIP 390 5% 1/10W	
R8903	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8904	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8905	1-216-113-00	RES-CHIP 470K 5% 1/10W	
R8906	1-216-035-00	RES-CHIP 270 5% 1/10W	
R8907	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R8908	1-216-035-00	RES-CHIP 270 5% 1/10W	
R8909	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R8911	1-216-025-11	RES-CHIP 100 5% 1/10W	
R8913	1-216-022-00	RES-CHIP 75 5% 1/10W	
R8914	1-216-071-00	RES-CHIP 8.2K 5% 1/10W	
R8915	1-216-022-00	RES-CHIP 75 5% 1/10W	
R8916	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8917	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8918	1-216-113-00	RES-CHIP 470K 5% 1/10W	
R8919	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R8922	1-216-022-00	RES-CHIP 75 5% 1/10W	
R8923	1-216-022-00	RES-CHIP 75 5% 1/10W	
R8924	1-216-022-00	RES-CHIP 75 5% 1/10W	
R8925	1-216-022-00	RES-CHIP 75 5% 1/10W	
R8926	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8927	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8928	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8929	1-216-039-00	RES-CHIP 390 5% 1/10W	
R8930	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R8931	1-216-039-00	RES-CHIP 390 5% 1/10W	
R8932	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R8933	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8934	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8935	1-216-113-00	RES-CHIP 470K 5% 1/10W	
R8936	1-216-113-00	RES-CHIP 470K 5% 1/10W	
R8937	1-216-035-00	RES-CHIP 270 5% 1/10W	
R8938	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R8939	1-216-035-00	RES-CHIP 270 5% 1/10W	
R8940	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R8941	1-216-025-11	RES-CHIP 100 5% 1/10W	
R8942	1-216-009-91	RES-CHIP 22 5% 1/10W	
R8943	1-216-022-00	RES-CHIP 75 5% 1/10W	
R8944	1-216-071-00	RES-CHIP 8.2K 5% 1/10W	
R8945	1-216-022-00	RES-CHIP 75 5% 1/10W	
R8946	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8947	1-216-039-00	RES-CHIP 390 5% 1/10W	
R8948	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R8949	1-216-022-00	RES-CHIP 75 5% 1/10W	
R8950	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8951	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8952	1-216-113-00	RES-CHIP 470K 5% 1/10W	
R8953	1-216-035-00	RES-CHIP 270 5% 1/10W	
R8954	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R8955	1-216-039-00	RES-CHIP 390 5% 1/10W	
R8956	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R8957	1-216-025-11	RES-CHIP 100 5% 1/10W	
R8958	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R8959	1-216-022-00	RES-CHIP 75 5% 1/10W	
R8960	1-216-017-91	RES-CHIP 47 5% 1/10W	
R8961	1-216-022-00	RES-CHIP 75 5% 1/10W	

REF. NO.	PART.NO	DESCRIPTION	REMARK
R8962	1-216-071-00	RES-CHIP 8.2K 5%	1/10W
R8963	1-216-113-00	RES-CHIP 470K 5%	1/10W
R8964	1-216-035-00	RES-CHIP 270 5%	1/10W
R8965	1-216-057-00	RES-CHIP 2.2K 5%	1/10W
R8968	1-216-022-00	RES-CHIP 75 5%	1/10W
R8969	1-216-017-91	RES-CHIP 47 5%	1/10W
R8974	1-216-057-00	RES-CHIP 2.2K 5%	1/10W
R8977	1-216-037-00	RES-CHIP 330 5%	1/10W
R8978	1-216-037-00	RES-CHIP 330 5%	1/10W
R8979	1-216-045-00	RES-CHIP 680 5%	1/10W
R8980	1-216-045-00	RES-CHIP 680 5%	1/10W
R8981	1-216-089-11	RES-CHIP 47K 5%	1/10W
R8982	1-216-079-00	RES-CHIP 18K 5%	1/10W
R8996	1-216-059-00	RES-CHIP 2.7K 5%	1/10W
R8997	1-216-071-00	RES-CHIP 8.2K 5%	1/10W
R8998	1-216-041-00	RES-CHIP 470 5%	1/10W

< CRYSTAL >

REF. NO.	PART.NO	DESCRIPTION	REMARK
X8200	1-781-148-21	VIBRATOR, CRYSTAL	
X8301	1-781-612-11	VIBRATOR, CRYSTAL	

J Board Variant Parts KV-28FX65

< CAPACITOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
C8243	1-110-501-11	CERAMIC CHIP 0.33UF	10.00% 16V
C8327	1-107-682-11	CERAMIC CHIP 1UF	10.00% 16V
C8331	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
C8332	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8333	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C8334	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V

< RESISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
JR8401	1-216-295-11	SHORT 0	
R8177	1-216-295-11	SHORT 0	
R8852	1-216-295-11	SHORT 0	

J Board Variant Parts KV-32FX65

< CAPACITOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
C8243	1-110-501-11	CERAMIC CHIP 0.33UF	10.00% 16V
C8327	1-107-682-11	CERAMIC CHIP 1UF	10.00% 16V
C8331	1-216-025-11	RES-CHIP 100 5%	1/10W
			(KV-32FX65B/32FX65E/32FX65K)
	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
			(KV-32FX65U)
C8332	1-216-025-11	RES-CHIP 100 5%	1/10W
			(KV-32FX65B/32FX65E/32FX65K)
	1-164-004-91	CERAMIC CHIP 0.1UF	10.00% 25V
			(KV-32FX65U)
C8333	1-216-025-11	RES-CHIP 100 5%	1/10W
			(KV-32FX65B/32FX65E/32FX65K)
	1-164-004-91	CERAMIC CHIP 0.1UF	10.00% 25V
			(KV-32FX65U)C8334
1-216-025-11	RES-CHIP	100 5%	1/10W
			(KV-32FX65B/32FX65E/32FX65K)
	1-164-004-91	CERAMIC CHIP 0.1UF	10.00% 25V
			(KV-32FX65U)

< RESISTOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
JR8401	1-216-295-11	SHORT 0	(KV-32FX65U)
JR8402	1-216-295-11	SHORT 0	(KV-32FX65B/32FX65E/32FX65K)
R8176	1-216-295-11	SHORT 0	(KV-32FX65B/32FX65E/32FX65K)
R8177	1-216-295-11	SHORT 0	(KV-32FX65U)
R8303	1-216-295-11	SHORT 0	(KV-32FX65B/32FX65E/32FX65K)
R8309	1-216-295-11	SHORT 0	(KV-32FX65B/32FX65E/32FX65K)
R8551	1-216-295-11	SHORT 0	(KV-32FX65B/32FX65E/32FX65K)
R8552	1-216-295-11	SHORT 0	(KV-32FX65B/32FX65E/32FX65K)
R8553	1-216-295-11	SHORT 0	(KV-32FX65B/32FX65E/32FX65K)
R8841	1-216-295-11	SHORT 0	(KV-32FX65B/32FX65E/32FX65K)
R8852	1-216-295-11	SHORT 0	(KV-32FX65U)

*A-1644-108-A VM Board, Complete

REF. NO.	PART.NO	DESCRIPTION	REMARK
	4-382-854-11	SCREW (M3X10), P, SW (+)	

< CAPACITOR >

REF. NO.	PART.NO	DESCRIPTION	REMARK
C5400	1-107-883-11	ELECT 330UF	20.00% 16V
C5401	1-126-935-11	ELECT 470UF	20.00% 16V
C5402	1-137-150-11	MYLAR 0.01UF	5.00% 50V
C5403	1-126-935-11	ELECT 470UF	20.00% 6.3V
C5405	1-126-933-11	ELECT 100UF	20.00% 16V
C5406	1-126-935-11	ELECT 470UF	20.00% 6.3V
C5407	1-107-364-11	MYLAR 0.01UF	10.00% 200V
C5408	1-107-364-11	MYLAR 0.01UF	10.00% 200V
C5409	1-107-649-11	ELECT 2.2UF	20.00% 250V
C5410	1-130-471-00	MYLAR 0.001UF	5.00% 50V
C5411	1-130-471-00	MYLAR 0.001UF	5.00% 50V
C5412	1-126-935-11	ELECT 470UF	20.00% 16V
C5413	1-126-935-11	ELECT 470UF	20.00% 16V
C5414	1-107-652-11	ELECT 10UF	20.00% 250V
C5415	1-107-363-91	MYLAR 0.0068UF	10.00% 200V
C5417	1-102-514-91	CERAMIC 22PF	5.00% 50V
C5418	1-102-947-00	CERAMIC 10PF	0.50PF 50V

VM

REF. NO.	PART.NO	DESCRIPTION	REMARK
		< CONNECTOR >	
CN5402	*1-564-506-11	PLUG, CONNECTOR 3P	
CN5444	*1-770-723-11	CONNECTOR, BOARD TO BOARD 8P	
CN5602	*1-564-509-11	PLUG, CONNECTOR 6P	
		< DIODE >	
D5400	8-719-991-33	DIODE 1SS133T-77	
D5401	8-719-510-02	DIODE D1NS4-TR	
D5402	1-535-143-61	LEAD, JUMPER (5.0MM)	
D5403	8-719-991-33	DIODE 1SS133T-77	
D5404	8-719-991-33	DIODE 1SS133T-77	
D5405	8-719-924-11	DIODE MTZJ-T-77-22	
D5406	8-719-924-11	DIODE MTZJ-T-77-22	
		< FERRITE BEAD >	
FB5400	1-535-143-61	LEAD, JUMPER (5.0MM)	
FB5401	1-535-143-61	LEAD, JUMPER (5.0MM)	
		< COIL >	
L5400	1-410-784-41	INDUCTOR 0.18UH	
L5401	1-408-602-31	INDUCTOR 8.2UH	
		< TRANSISTOR >	
Q5400	8-729-119-78	TRANSISTOR 2SC1740S-RT	
Q5401	8-729-119-78	TRANSISTOR 2SC1740S-RT	
Q5402	8-729-119-78	TRANSISTOR 2SC1740S-RT	
Q5403	8-729-119-78	TRANSISTOR 2SC1740S-RT	
Q5404	8-729-026-39	TRANSISTOR 2SA933AS-RT	
Q5405	8-729-026-39	TRANSISTOR 2SA933AS-RT	
Q5406	8-729-045-05	TRANSISTOR 2SA2005	
Q5407	8-729-045-04	TRANSISTOR 2SC5511	
Q5408	8-729-026-39	TRANSISTOR 2SA933AS-RT	
Q5409	8-729-119-78	TRANSISTOR 2SC1740S-RT	
		< RESISTOR >	
R5401	1-247-843-11	CARBON 3.3K 5% 1/4W	
R5402	1-249-413-11	CARBON 470 5% 1/4W	
R5403	1-249-393-11	CARBON 10 5% 1/4W	
R5404	1-249-420-11	CARBON 1.8K 5% 1/4W	
R5405	1-249-425-11	CARBON 4.7K 5% 1/4W	
R5406	1-249-425-11	CARBON 4.7K 5% 1/4W	
R5407	1-249-399-11	CARBON 33 5% 1/4W	
R5408	1-247-807-31	CARBON 100 5% 1/4W	
R5409	1-249-409-11	CARBON 220 5% 1/4W	
R5410	1-249-401-11	CARBON 47 5% 1/4W	
R5411	1-249-401-11	CARBON 47 5% 1/4W	

REF. NO.	PART.NO	DESCRIPTION	REMARK
R5412	1-249-429-11	CARBON 10K 5% 1/4W	
R5413	1-249-414-11	CARBON 560 5% 1/4W	
R5414	1-249-432-11	CARBON 18K 5% 1/4W	
R5415	1-247-739-11	CARBON 100 5% 1/2W	
R5416	1-249-389-11	CARBON 4.7 5% 1/4W	
R5417	1-249-432-11	CARBON 18K 5% 1/4W	
R5418	1-249-414-11	CARBON 560 5% 1/4W	
R5419	1-249-421-11	CARBON 2.2K 5% 1/4W	
R5420	1-249-421-11	CARBON 2.2K 5% 1/4W	
R5421	1-249-387-11	CARBON 3.3 5% 1/4W	
R5422	1-249-405-11	CARBON 100 5% 1/4W	
R5423	1-215-915-11	METAL OXIDE 470 5% 3W	
R5425	1-535-143-61	LEAD, JUMPER (5.0MM)	
R5427	1-249-401-11	CARBON 47 5% 1/4W	
R5428	1-249-413-11	CARBON 470 5% 1/4W	
R5429	1-249-413-11	CARBON 470 5% 1/4W	
R5430	1-249-417-11	CARBON 1K 5% 1/4W	
R5432	1-249-415-11	CARBON 680 5% 1/4W	
R5433	1-249-400-11	CARBON 39 5% 1/4W	
R5434	1-249-395-11	CARBON 15 5% 1/4W	

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

MISCELLANEOUS

REF. NO.	PART.NO	DESCRIPTION	REMARK
⚠	1-416-466-11	COIL DEMAGNETIC (KV-28FX65)	
⚠	1-416-769-11	COIL DEMAGNETIC (KV-32FX65)	
	1-452-032-00	MAGNET, DISK; 10MM	
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM	
⚠	1-453-340-21	TRANSFORMER ASSY, FLYBACK (NX4522//U214)	
	1-529-899-11	SPEAKER (24x4.2CM)	
	1-529-417-11	SPEAKER (8CM)	
	1-419-363-11	COIL, NA ROTATION	
⚠	1-571-433-21	SWITCH, PUSH (AC POWER)	
⚠	1-792-389-11	CORD, POWER (KV-28FX65B/28FX65E/32FX65B/32FX65E/32FX65K)	
⚠	1-792-592-11	CORD, PLUG WITH POWER (KV-28FX65U/32FX65U)	
⚠	8-453-011-11	NECK ASSY, (NA-299-M)	
	1-693-340-11	TUNER/VIF (FR) (KV-28FX65B/32FX65B)	
	1-693-338-21	TUNER/VIF (AEP) (KV-28FX65E/32FX65E/32FX65K)	
	1-693-339-11	TUNER/VIF (KV-28FX65U/32FX65U)	
⚠	8-737-786-05	PICTURE TUBE (W66LLX060X) (KV-28FX65)	
⚠	8-735-054-05	PICTURE TUBE (W76LLZ060X) (KV-32FX65)	
⚠	1-451-481-11	DEFLECTION YOKE (Y28RVC2) (KV-28FX65)	
⚠	1-451-480-11	DEFLECTION YOKE (Y32RVC2) (KV-32FX65)	
⚠	1-251-317-63	CAP ASSY, HIGH VOLTAGE	
	1-790-082-11	CABLE, RF	

ACCESSORIES AND PACKAGING MATERIALS

REF. NO.	PART.NO	DESCRIPTION	REMARK
	*4-205-744-51	MANUAL, INSTRUCTION (KV-28FX65B) (GERMAN/FRENCH/ENGLISH/ITALIAN/DUTCH)	
	*4-205-744-71	MANUAL, INSTRUCTION (KV-28FX65E) (GERMAN/GREEK/ITALIAN)	
	*4-205-744-81	MANUAL, INSTRUCTION (KV-28FX65E) (DANISH/SPANISH/FINNISH/NORWEGIAN/PORTUGUESE/SWEDISH)	
	*4-205-744-61	MANUAL, INSTRUCTION (KV-28FX65U/32FX65U) (ENGLISH)	
	*4-205-753-31	MANUAL, INSTRUCTION (KV-32FX65B) (GERMAN/FRENCH/ITALIAN/DUTCH)	
	*4-205-753-41	MANUAL, INSTRUCTION (KV-32FX65B) (ENGLISH)	
	*4-205-753-11	MANUAL, INSTRUCTION (KV-32FX65E) (DANISH/SPANISH/NORWEGIAN/PORTUGUESE/FINNISH/SWEDISH)	
	*4-205-753-21	MANUAL, INSTRUCTION (KV-32FX65E) (GERMAN/GREEK/ITALIAN)	
	*4-205-753-41	MANUAL, INSTRUCTION (KV-32FX65B) (CZECH/ENGLISH/HUNGARIAN/POLISH)	
	*4-395-957-01	BAG, PROTECTION (KV-28FX65)	
	*4-046-772-01	BAG, PROTECTION (KV-32FX65)	
	*4-205-503-01	INDIVIDUAL CARTON (KV-28FX65)	
	*4-205-512-01	INDIVIDUAL CARTON (KV-32FX65B/32FX65E/32FX65K)	
	*4-205-530-01	INDIVIDUAL CARTON (KV-32FX65U)	
	*4-205-504-01	CUSHION (UPPER) (ASSY) (KV-28FX65)	
	*4-205-505-01	CUSHION (LOWER) (ASSY) (KV-32FX65B/32FX65E/32FX65K)	
	*4-205-513-01	CUSHION (UPPER) (ASSY) (KV-32FX65B/32FX65E/32FX65K)	
	*4-205-513-01	CUSHION (UPPER) (ASSY) (KV-32FX65U)	
	*4-205-505-01	CUSHION (LOWER) (ASSY) (KV-28FX65)	
	*4-205-514-01	CUSHION (LOWER) (ASSY) (KV-32FX65B/32FX65E/32FX65K)	
	*4-205-532-01	CUSHION (LOWER) (ASSY) (KV-32FX65U)	

REMOTE COMMANDER

REF. NO.	PART.NO	DESCRIPTION	REMARK
	1-418-476-21	REMOTE COMMANDER (RM-887)	

TRACE

A new TV Repair Assistance Tool that combines ease of use and powerful PC software tools to allow you to save valuable time during many TV repairs.

RS-232
IR
I²C
SONY-TCSE
TRACE
CTRL
POWER
9V DC
POWER

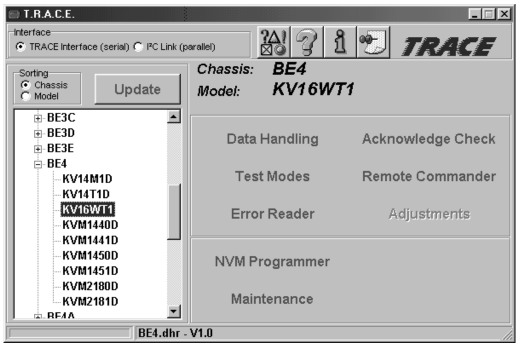
The TRACE interface connects to the PC's serial port. It provides connection to the TV's I^2C bus and can be provided with an InfraRed transmitter (optional).

The interface is powered by a standard 9 V PP3 battery for portable use, and can also be powered by an external 9V/25mA DC power supply.

The TRACE software that is supplied with the interface allows you to:
- Read, restore and compare NVM contents via the I^2C bus
- Acknowledge check of all I^2C devices in the TV set
- Read Error Codes (emulation of the Error Reader tool)

With the optional IR Add-on kit, the following features can be added:
- Remote Commander emulation
- User programmable Functional Check through Infrared
- Fast and documented Test Mode setting of all Sony TV chassis

Additional features such as Adjustments and Troubleshooting are available in chassis-dependent software modules. Please contact your local Sony Service organisation for the latest information.


T.R.A.C.E.

Interface
● TRACE Interface (serial) ○ I²C Link (parallel)

Sorting
● Chassis
○ Model

Chassis: BE4
Model: KV16WT1

BE4.dhr - V1.0
TRACE
Update
BE3C
BE3D
BE3E
BE4
KV14M1D
KV14T1D
KV16WT1
KVM1440D
KVM1441D
KVM1450D
KVM1451D
KVM2180D
KVM2181D
BE4A
Data Handling
Acknowledge Check
Test Modes
Remote Commander
Error Reader
Adjustments
NVM Programmer
Maintenance

Note: For workshops already using the existing I^2C Link parallel port interface (9-948-320-30), this software can be used as well, replacing the TV Data Handling software (9-948-340-50), but Error Reader and IR functions can only be accessed with the TRACE interface.

Partnumbers:	TRACE Starter Kit (TRACE interface + software):	9-948-320-70
	TRACE Software (for users of the I^2C Link interface):	9-948-340-80
	TRACE IR Add-on (IR interface + Remote Commander software):	9-948-320-80

PC requirements: IBM-compatible PC with operating system Windows95, Windows98, or WindowsNT*.

* WindowsNT only supported with TRACE interface

Sony Corporation
Sony UK
Service Promotions Dept.

9-974-999-01

English
00IP7173-1
Printed in U.K.
© 2000.9